JULY
DECEMBER

1968

Vol. 181

Engineering
News-Record

Serving The Entire Construction Industry

Index

. . . of editorial content

McGraw-Hill, Inc.
330 West 42nd Street, New York, N.Y. 10036

ENGINEERING NEWS-RECORD INDEX

CONTENT

Part I – Subject Index

The index includes all articles that have appeared within the dates covered, with the exception of certain Briefs (such as Labor Briefs, Careers) and Obituaries.

The subject headings under which all articles are indexed appear in alphabetical order. Within the subject headings the entries are listed chronologically.

Many important headings are divided into subheadings, for example, BRIDGES – by states or countries; CITIES – by name; BUILDINGS – by type (churches, garages, etc.).

International coverage is shown under the letter "I." The items here listed geographically also appear under the appropriate subject headings.

Part II – Names

Part II of the index contains names of authors, personalities, and companies. Listed here are the names of people who are the subject of articles; names of authors of by-lined articles and published letters; and names of firms about which articles were written.

Individuals or firms simply mentioned in feature articles about various construction projects are seldom indexed by name. Those, on the other hand, who are listed under **Names** will usually not appear under the subject heading. For example, an article about the Smith Construction Co. appears only in the **Names** section and will not be found under the heading CONTRACTORS.

Part III – Product Manufacturers

Items that describe new materials and equipment, including Product Briefs, are indexed under this heading, by manufacturer's name.

TERMS USED

See means that all entries on the subject will be found under another heading: EXCAVATING, **see:** SOIL.

See also means that a related heading should also be checked: SEWAGE, **see also:** WATER POLLUTION.

The following abbreviations and signs are used:	e – Editorial
RC – Reader Comment	** – Article with several illustrations
CW – Construction Week	* – Illustrated article (if asterisk precedes entry, reference is to a picture with caption only)
WO – Washington Observer	
B – Brief and Around the World	

ENGINEERING NEWS-RECORD is published every Thursday. There are 25 or 26 issues in each half-yearly volume, covering January to June and July to December, starting with vol. 78 in 1917, when ENGINEERING NEWS and ENGINEERING RECORD joined forces under the present title.

If you would like any information about material that ENGINEERING NEWS-RECORD has published, do not hesitate to make direct inquiry by mail or telephone to: Gabriella L. Turnay, McGraw-Hill Inc., 330 West 42nd Street, New York, N.Y. 10036, telephone (212) 971-3507.

ENGINEERING NEWS-RECORD INDEX

July-December 1968

Part I

A

ACCIDENTS, DISASTERS, FAILURES; SAFETY
see also: SOIL; Weather

ACCIDENTS
On causes of Pt. Pleasant Bridge collapse RC p16 ..... Jul 11
Ala. crane hits column, partly collapses precast frame. p11 Aug 8
Manila quake collapses apt bldg; Mexico City quake does little damage,*. p12 ..... Aug 8
Costa Rican volcano rips remote villages and roads. p12 . Aug 8
Investigation of Manila apt bldg quake collapse. CW p7 . Aug 15
50-ton derrick crane collapse in Chicago. B p16 ..... Aug 15
Japan landslide sweeps two tour buses into river. CW p9 Aug 22
Manila: 400-death apt bldg collapse laid to poor design. p16 ..... Aug 22
Main break cracks Dulles Airport tower. p16 ..... Aug 22
Manila apt bldg collapse: multiple homicide laid to architect, engineers. p38 and e p112 ..... Aug 29
On Pt. Pleasant Bridge collapse. RC p4 ..... Sep 12
Overloaded floor frame crashes at NYC office bldg,*. p14 Sep 12
Iranian earthquakes kill 20,000, map,*. p16 ..... Sep 12
Ghana: Densu River dam fails. p16 ..... Sep 12
Nicaragua's Mistrook Dam collapse. B p22 ..... Sep 12
First suit by a survivor of Pt. Pleasant Bridge collapse. CW p75 ..... Sep 19
Wuppertal, Germany's monorail damaged by truck,*. p86 Sep 19
Flood wipes out Italian railroad bridge,*. p19 ..... Sep 26
Land sinks along Sacramento freeway job,**. p22 ..... Oct 10
Osaka office bldg bordering excavation tilts backwards,*. p30 ..... Oct 17
Crane pierces Pa. cooling tower,*. p33 ..... Oct 17
and RC p8 ..... Nov 7
1963 Baldwin Hills Reservoir collapse to U.S. Supreme Court? CW p13 ..... Oct 24
NYC stairways collapse. CW p7 ..... Oct 31
Baldwin Hills Reservoir failure case to U.S. Supreme Court? p12 ..... Oct 31
Malaysia bldg collapse may cause law change,*. p33 .... Nov 7
Pt. Pleasant Bridge collapse cause sent to lab. p41 ..... Nov 7
Worcester, Mass. overpass collapse blamed on bracing. p19 Nov 21
Oil firms' motion fails in Baldwin Hills Reservoir collapse suit. p22 ..... Nov 21
British apt. collapse report cites bldg code flaws. p23 ... Nov 21
San Antonio warehouse collapse cause investigated. p23 Nov 21
Vaiont Dam engineer commits suicide before trial. CW p27 Nov 28
Buenos Aires apt bldg collapse kills three. CW p7 ..... Dec 5
Vaiont Dam suits pending. CW p7 ..... Dec 5
NYC: warehouses under demolition fail,*. p18 ..... Dec 12
Winds topple steel frame for Greenwich, Conn. office bldg. p18 ..... Dec 12
Vaiont Dam disaster survivors offered quick settlement. p18 ..... Dec 12
Munich: subway construction site explosion. B p60 .... Dec 19
Suit settled on '67 damage to Chesapeake Bay Bridge-Tunnel. B p60 ..... Dec 19

• Safety
House leaves little in pipeline safety bill. WO p25 ..... Jul 11
Federal safety standards bill stirring in Congress. WO p9 Jul 18
Stacked mobile homes present substantial fire load. RC p6 Jul 25
Calif bill stipulates school structures must meet earthquake and fire safety standards. CW p27 ..... Aug 1
Safety bill among last due out of 90th Congress. WO p29 Aug 1
British fear explosions, cut off gas in prefab bldgs. p17 Aug 22
Highway safety: more than design. e p68 ..... Aug 22
Shoddy work endangers lives. e p112 ..... Aug 29
Natural gas pipelines do not need federal regulation. RCs p4 ..... Sep 5
Federal-state program aimed at hwy hazards. WO p9 ... Sep 5
New structural techniques require increased safety precautions. e p276 ..... Sep 19
Emergency call-box system for Calif bridge. B p20 ..... Sep 26
W. Va. toll bridge is closed as consultant cites hazards. p17 Oct 3
Model cities: safety's only one problem,**. p133 .... Nov 7
Fine for violating Ontario Safety Act. B p80 ..... Dec 19

ACOUSTICS, NOISE CONTROL
NY State assessed for road noise. p32 ..... Jul 11
Boeing 747 brings warning of noise abatement problem. B p35 ..... Oct 17
Construction industry noise studied. CW p11 ..... Nov 14

ADHESIVES, COATINGS, INSULATION, PAINT
Money-saving urethane foam insulation is cover-all at Juilliard School of Music,**. p26 ..... Sep 26

AERONAUTICS, see: AIRCRAFT; AIRPORTS; SPACE

AID, see: INTERNATIONAL

AIR CONDITIONING, HEATING, VENTILATION
Nonmetallic duct approved. B p24 ..... Jul 18
Vancouver, B.C. installs heating system under downtown sidewalks. B p22 ..... Sep 12

AIRCRAFT, AIR LIFT
First flight for world's largest plane, C-5A Galaxy,*? p32 Jul 11
Boeing 747 brings warning of noise abatement problem. B p35 ..... Oct 17
Pan Am helicopters to relieve congestion of major NYC airports. CW p13 ..... Oct 24
Vietnam helicopter base will use Calif plant to keep down sand. B p36 ..... Nov 7

AIR POLLUTION, See: HEALTH

AIRPORTS, see also: BUILDINGS • Terminals; PAVING
Scrap airport aid program? e p68 ..... Jul 4
Tests for chemical dispersal of warm fog at airports,**. p36 ..... Jul 11
Airport spending bills appear to be grounded. WO p9 ... Jul 18
ATA urges more runway grooves for major airports. B p24 Jul 18
Air transportation needs help,*. p13 ..... Aug 22
FAA's short-term air traffic measure won't go far. WO p27 Aug 29
Congestion requires additional airports and facilities e p112 ..... Aug 29
FAA proposes STOL guidelines,*. p19 ..... Oct 3
Presidential candidates for raising spending. WO p15 .... Oct 24
Nov. 22 is deadline for airport aid requests. B p31 ..... Oct 24
Airports and cities may float offshore. WO p9 ..... Oct 31
New airport design team to cut completion time. B p23 . Oct 31
FAA proposes $2-billion airport improvements. p42 .... Nov 28
Urgent need for airport trust fund. e p76 ..... Dec 5

• American
Dallas-Fort Worth jetport terminal plan evaluated. CW p7 Jul 18
Airport for Everglades, near Miami, Florida. CW p9 .... Jul 25
Dallas-Fort Worth jetport: study to be sure new terminal is best,*. p20 ..... Jul 25
Consultant for Newark Airport new terminal construction. B p21 ..... Jul 25
Puerto Rico plans second Intl Airport. B p21 ..... Jul 25
Federal airport for NYC proposed. CW p5 ..... Aug 8
Washington Natl Airport gets red and white runway lights. B p14 ..... Aug 8
Federal airport for NYC unlikely. CW p7 ..... Aug 15
Training airport for Everglades will be big enough to change, map, diag. p14 ..... Aug 15
HUD funds regional airport study for South Calif. p15 .. Aug 15
Chemicals keep down dust at Calif heliport. p21 ..... Aug 15
Site sought for Chicago's O'Hare Intl expansion. p15 .... Aug 22
Main break cracks Dulles Airport tower. p16 ..... Aug 22
Burns & Roe, Inc. also worked on Pan Am's Kennedy Intl Airport maintenance base. RC p8 ..... Aug 29
Ohio airport near Ravenna would cover 80 sq miles, map,*. p30 ..... Aug 29
Indiana to study five airport sites. p33 ..... Aug 29
Unions to picket Dallas-Fort Worth airport over wages. CW p7 ..... Sep 5
Architects chosen for Atlanta Airport terminal CW p7 .. Sep 12
Chemical fog dispersal proposed for Ore. and Calif. airports. B p86 ..... Sep 19
N.J.'s Great Swamp, possible site for NYC's fourth jetport, to become part of Natl Wilderness System. CW p6 .... Sep 26
Alternatives for Dallas-Fort Worth jetport terminal design. CW p6 ..... Sep 26
Dallas-Fort Worth jetport design: semicircular terminal bldgs replace megastructure,*. p17 ..... Oct 3
NYC proposal combines offshore airport with bridge-tunnel, maps. p18 ..... Oct 3
Dallas-Fort Worth terminal concept a winner,*. p31 .... Oct 17
Chicago offshore jetport opposition spurs site studies. p15 Oct 31
Florida: Jacksonville Intl Airport opens. B p36 ..... Nov 7
Jumbo-jet airport proposed for Colo. p20 ..... Nov 14
Hancock Airport, Syracuse, to expand. B p20 ..... Nov 14
Criticism of Dallas-Fort Worth terminal redesign. RC p6 Nov 21
Pan Am's Kennedy terminal largest in the world for single airline,*. p20 ..... Nov 21
Cleveland has first U.S. airport transit link,*. p22 .... Nov 21
Pan Am to operate N.J.'s Teterboro Airport. B p25 .... Nov 21
Bishop Airport, Mich.: full-depth asphaltic runway laid on clay,**. p28 ..... Dec 5
Michigan proposes loan program for small airports. p62 . Dec 5
Tristate Committee wants new authority to take over Phila, Wilmington and Trenton airports. B p22 ..... Dec 12
Montana runway and lighting job, unit prices. p51 ..... Dec 12
Dallas-Fort Worth: the everything study. CW p51 ..... Dec 19

• Foreign
Canada plans Montreal's second airport and Toronto's expansion. CW p5 ..... Aug 8
Canada may study Lake Ontario for airport. CW p7 .... Oct 31
Germany: Cologne-Bonn airport turned to "showpiece." p68 ..... Nov 28
Great Britain: England's longest runway at London's Heathrow Airport. B p23 ..... Oct 31
Hong Kong airport has Far East's largest hangar. B p35 . Oct 17
Iran plans two large airports. p15 ..... Sep 5
Italy: plans for Rome's third airport. B p24 ..... Jul 18
Japan: start set for New Tokyo airport,*. p31 ..... Aug 29
Seychelles Islands get first airport. B p16 ..... Dec 5
Switzerland's Geneva Airport set for giant jets,*. p24 ... Jul 4
Thailand: Bangkok airport expands, new one year off. p85 Sep 19

AIR RIGHTS, see: BUILDING DESIGN; CITIES; LEGAL DEVELOPMENTS

ALUMINUM, see also: PRODUCT MANUFACTURERS
AIA ready for '67 R.S. Reynolds award nominations. B p35 ..... Oct 17

AMERICAN Associations, Societies, etc. — see subject

ANCHORS, see: BEAMS, COLUMNS, FRAMES

APARTMENTS, see: BUILDINGS

APPALACHIA, see: ECONOMY; HIGHWAYS

APPRENTICESHIP, see: EDUCATION see also: ETHICS: Civil Rights

AQUEDUCTS, see: WATER RESOURCES

ARCHES, see: BRIDGES; CONCRETE; LUMBER; ROOFS; STEEL

ARCHITECTURE, see also: BUILDING DESIGN; PLANNING & ENVIRONMENT
AIA convention: architects chided for urban mess, take on challenge to change it,*. p16 ..... Jul 4
AIA's Kassabaum: architects' first goal is to stay in the running,**. Cover, p26 and e p68 ..... Jul 4
Attack on industry's liability confusion. e p104 ..... Jul 11
VA cramped by 6% A-E fee limit. CW p9 ..... Jul 25
VA allowed to drop 6% A-E fee limit. p33 ..... Aug 1
Sydney Opera House: sketches vs architecture. e p76 ... Aug 15
ENR plays up architect over engineer. RC p6 ..... Aug 22
Sweden's architects ask charwomen how to make job easier. B p21 ..... Aug 22
A big market in federal design work, table. p21 ..... Sep 5
AIA hq designer resigns. CW p11 ..... Oct 3
Need for team effort by all design professionals RC p6 .. Oct 10
AIA ready for '69 R.S. Reynolds award nominations. B p35 ..... Oct 17
AIA ads respond to urban crisis. CW p13 ..... Oct 24
Lawrence Halprin: cities don't have to be ugly,**. Cover and p53 ..... Nov 7
Professional groups form Joint Committee on Employment Practices. p133 ..... Nov 7
Office of Educ to use AIA contract document A-201. p73 Nov 14
Landscape architects launch study of their profession. CW p9 ..... Nov 21
AEG and CESO: professional unionism begins to perk up p54 ..... Dec 5
Unions worry A-Es. p172 ..... Dec 19

ARCTIC, see: WEATHER; SOIL

AREA REDEVELOPMENT PROGRAM, see: ECONOMY; PLANNING

ASPHALT, see: PAVING

ASSOCIATED GENERAL CONTRACTORS, see: CONTRACTORS

ASSOCIATIONS, see subject see also: MEETINGS

ATOMIC ENERGY, RADIATION see also: BUILDINGS; POWERS
Power for AEC to regulate thermal pollution from A-plants. p23 ..... Jul 18
Project Ketch: no site in Pa. to blast underground gas storage cavern. B p24 ..... Jul 18
Chances good for law permitting commercial nuclear explosions. CW p9 ..... Jul 25
A-blasts for excavation: time for commercial use WO p9 Jul 18
Senate increases funds for AEC's Weston, Ill. Accelerator. WO p11 ..... Jul 25
For peaceful cooperation between U.S. and USSR. e p92 Jul 25
Public works and AEC bill is lean on pork this year. p32 Aug 1
A-plant planned ½ mile from New Rochelle, N.Y., map. p34 ..... Aug 1
Bolsa Island project dies in Calif. p35 ..... Aug 1
Storm brews over nuclear plant licensing. p12 ..... Aug 15
TVA's second nuclear plant, on Chickamauga Lake B p16 Aug 15
Calif: alternatives to Bolsa Island A-power plant studied. CW p9 ..... Aug 22
Calif: Bolsa Island revival? CW p7 ..... Sep 5
Calif firm sets up advisory service on industrial applications of nuclear explosives. B p35 ..... Oct 17
Corps drops nuclear excavation plan to open Idaho quarry. p30 ..... Oct 24
Corps' Pre-Gondola nuclear excavation test in Montana,*. p21 ..... Nov 14
First bids mark start of Weston, Ill., accelerator project. p20 ..... Nov 21
Natural draft cooling tower for Portland's Trojan Plant. B p25 ..... Nov 21
Calif: Bolsa Island project lives. CW p7 ..... Dec 5
Calif: Bolsa Island Project goes ahead. CW p51 ..... Dec 19

• Foreign
Canada: nuclear plant for Douglas Point, Lake Huron. CW p11 ..... Dec 12
Finland may get three A-plants. CW p25 ..... Nov. 7
Germany: reactor from USSR miffs East Germans. B p25 Nov 21
Great Britain: N. Scotland's first nuclear plant. B p23 .. Sep 5
Japan starts port facilities for A-powered ships. B p25 .. Jul 4
Taiwan's first nuclear plant. B p25 ..... Nov 21

AUDITORIUMS, see: BUILDINGS

AUGERS, see: EQUIPMENT • Drilling

AUTOMATION, see: COMMUNICATIONS, AUTOMATION

AWARDS
Asphalt Inst names six to roll of honor. p65 ..... Jul 18
Pittsburgh receives first ASCE Comprehensive Program Award. e p100 ..... Oct 10
AIA ready for '69 R.S. Reynolds award nominations. B p35 ..... Oct 17
Chance to compete for AISI's annual Design in Steel award B p25 ..... Nov 21

B

BARGES, see: NAVIGATION; TRANSPORTATION

BEACH PROTECTION, see SOIL
see also: DAMS; WALLS

BEAMS, COLUMNS, GIRDERS, TRUSSES; FRAMES
SEE ALSO: CONCRETE; STEEL
Componoform, structural framing system, for Mass. seven-story apt.,**. p22 ..... Jul 4
First use of "true" hybrid steel beams on Texas bridge. p19 ..... Jul 25
Space truss roofs Princeton gymnasium,**. Cover and p24 Aug 22
Austria: vierendeel trusses aid Vienna hospital support,** p40 ..... Aug 29
Portland, Ore's Georgia Pacific Bldg: columns of grouted aggregate,**. p31 ..... Sep 26
and correction RC p10 ..... Oct 10
Baton Rouge: columns on mat support La. Natl Bank,*. p21 ..... Nov 21

BIAS, see: ETHICS • Civil Rights

BIDS, see project in question;
see: CONTRACTS & BIDS

BITUMINOUS CONCRETE, see: PAVING

BLASTING, see: EXPLOSIVES

BOLTS, see: BEAMS & FRAMES

BONDS see also: CONSTRUCTION BUSINESS; ECONOMY
Another $100-m for Calif State Water Project. CW p9 .. Jul 4
Tax bill's provision on industrial-aid bonds stirs a flap. p48 ..... Jul 4
Ohio's $759-m bond package. p91 ..... Jul 11
Easier financing to spur public works. p78 ..... Jul 18
Calif bond-sale halt threatened by Watson Initiative. p56 Aug 15
Mississippi to vote on hwy bonds. B p22 ..... Sep 12
Watson Amendment ban-the-bond idea jars Calif. p56 .. Sep 12
Calif program for property tax reduction a counterattack on Watson Amendment. CW p75 ..... Sep 19
Calif: quick sale of bond anticipation notes prompted by Watson Amendment. CW p11 ..... Oct 3
As banks cut prime rate, bond yields will fall. p17 ..... Oct 3
Calif: premature municipal bond offerings in response to Watson Amendment. CW p15 ..... Oct 10
Atlanta transit system safe on ballot. CW p13 ..... Oct 24
Interest rates sizzle as economy thrives, graph. p69 .... Oct 24
Bond issue for Churchill Falls (Labrador) Corp., Ltd. CW p7 ..... Oct 31
Texas voters approve issuance of hwy bonds by simple majority. CW p11 ..... Nov 14
Bond approvals hit record $4-billion, table. p16 and e p92 Nov 14
Voters put more money in state purses; Calif Watson Amendment defeated. p61 ..... Nov 21

BOOK REVIEWS
The Finite Element Method by O.C. Zienkiewicz and Y.K. Cheung. p49 ..... Jul 11
Traffic Flow Theory and Control by Donald R. Drew. p56 Jul 18
Standard Specifications for Construction of Airports by the Federal Aviation Administration. p56 ..... Jul 18
Introduction to Mechanics of Solids by Egor P. Popov. p42 ..... Jul 25
Orthotropic Bridges: Theory and Design by M.S. Troitsky. p 38. ..... Aug 22
Plastic Design of Braced Multistory Steel Frames by the American Iron and Steel Institute, p62 ..... Aug 29
Reclamation of Water From Wastes: Coastal San Diego County by California Department of Water Resources. p62 ..... Aug 29
Standard Hdbk for Civil Engineers, ed. by F.S. Merritt. RC p4 ..... Oct 31
and RC p16 ..... Nov 28
Boeckh Building Valuation Manuals, American Appraisal Co. p96 ..... Nov 28

BREAKWATERS, see: PORTS AND HARBORS; DAMS

BRICKS, TILES, MASONRY
San Diego's Catamaran Motel tallest load-bearing masonry block bldg on West Coast,**. p43 ..... Aug 29

BRIDGE DESIGN
Houston: beauty bridge is Astroworld entrance,*. p31 .. Jul 11
NY State pseudo orthotropic span slashes costs, diag. p34 Jul 11
Prospects for first long-span, post-tensioned concrete bridge by cantilever method in U.S. or Canada. CW p21 Aug 1
Va. double-leaf bascule is an Interstate oddity,**. p22 . Aug 8
S. Africa's longest bridge crosses Orange R.**. p22 .... Aug 15
Lionel Pavlo: active bridge designer takes the initiative,**. Cover and p44 ..... Aug 29
Phila Arts Commission asks Del. R. Port Authority for new bridge design,*. p106 ..... Aug 29
RC p3 ..... Sep 26
RC p3 ..... Oct 24
RC p6 ..... Nov 14
Welsh bridge another variation of welded steel box-girder design,*. p13 ..... Sep 5
Pittsburgh's Fort Duquesne Bridge finally gets somewhere on boxes, diag,**. Cover and p96 ..... Sep 19
R.I.'s Newport Bridge near completion,*. p16 ..... Sep 26
Calif has first tubular girder bridge in U.S.*. p21 ..... Oct 3
Washington's Selah Creek Bridge to have longest concrete arch spans in N. America. B p16 ..... Dec 5

BRIDGES
Roll-out plastic bridge,*. p44 ..... Jul 18
Puerto Rico hwy bridge over Martin Pena Canal. B p38 . Aug 29

• American

California
Owner removes old San Mateo-Hayward lift span bridge to yard,*. p35 ..... Aug 1
Road and bridge job, unit prices. p163 ..... Sep 19
Emergency call-box system for San Mateo-Hayward Bridge. B p20 ..... Sep 26
Marin County has first tubular girder bridge in U.S.*. p21 Oct 3
Calif bill to raise tolls on San Fran-Oakland Bay Bridge fails. p74 ..... Oct 3
San Diego-Coronado Bridge: long spans cantilever to finish,**. p14 ..... Dec 5

Connecticut
Connecticut highway and bridges, unit prices. p116 .... Dec 19

D.C.
U.S. Capital highway bridge job, unit prices. p46 ..... Nov 21

Hawaii
Interstate viaduct in Hawaii, unit prices. p166 ..... Sep 19

Massachusetts
Worcester overpass collapse blamed on bracing. p19 .... Nov 21

New Jersey
Phila Arts Commission asks new design for Bridesburg-Delair Bridge,* see: Pennsylvania

New York
Onandago County pseudo orthotropic span slashes costs, diag. p34 ..... Jul 11
Nighttime is right time to repair NYC's Kosciusko Bridge,**. Cover and p26 ..... Aug 15
Storm over proposed L.I. Sound crossing. CW p61 ..... Dec 19

Ohio
More problems under Cleveland roads,**. p20 ..... Jun 27
Truss bridge felled by truck replaced with steel deck girder. B p25 ..... Jul 4

Pennsylvania
Investigation of Phila. Walt Whitman Bridge cracks. p23 . Jul 4
Pittsburgh's Fort Duquesne Bridge linked to stadium and I-79. B p34 ..... Jul 11
Phila Arts Commission asks new design for Bridesburg-Delair Bridge,*. p106 ..... Aug 29
RC p3 ..... Sep 26
RC p3 ..... Oct 24
RC p6 ..... Nov 14
Pittsburgh's Fort Duquesne Bridge finally gets somewhere on boxes, diag,**. Cover and p96 ..... Sep 19
Viaduct builder defies Conneaut Swamp, diags,**. p44 . Oct 17
and RC p8 ..... Nov 7
Excursion boat hosts Smithfield Bridge inspectors*. p28 Oct 24

Rhode Island
Newport Bridge nears completion,*. p16 ..... Sep 26

Texas
Houston: beauty bridge is Astroworld entrance,*. p31 .. Jul 11
First use of "true" hybrid steel beams. p19 ..... Jul 25

Virginia
Double-leaf bascule is an Interstate oddity,**. p22 ..... Aug 8
Suit settled on '67 damage to Chesapeake Bay Bridge-Tunnel. B p60 ..... Dec 19

Washington
Selah Creek Bridge to have longest concrete arch spans in N. America. B p16 ..... Dec 5

West Virginia
On causes of Pt. Pleasant Bridge collapse. RC p16 ..... Jul 11
State Road Commissioner objects to Pt. Pleasant Bridge editorial. RC p4 ..... Jul 18
Engineers' responsibility in Pt. Pleasant Bridge collapse. RC p4 ..... Jul 25
Pt. Pleasant Bridge collapse: causes of brittle fracture. RC p4 ..... Aug 15
On Pt. Pleasant Bridge collapse. RC p4 ..... Sep 12
First suit by a survivor of Pt. Pleasant Bridge collapse. CW p75 ..... Sep 19
Toll bridge is closed as consultant cites hazards. p17 ... Oct 3
Pt. Pleasant Bridge collapse cause sent to lab. p41 ..... Nov 7
Point Pleasant Bridge replacement 100% federally financed p36 ..... Nov 28

• Foreign
Argentina seeks concessionaire to operate the two Morandi toll bridges. B p24 ..... Jul 18
Argentina awards contract for hwy bridge at Corrientes. B p21 ..... Jul 25
Belgium: alteration altercation delays E-3 viaduct portion of Kleine Ring Road,**. p33 ..... Nov 21
Canada's work on Northumberland Strait Crossing suspended due to costs. CW p15 ..... Oct 10
China's Great Yangtze R. Bridge cracking. p24 ..... Jul 4
Czechoslovakia: Prague viaduct serves as road, rail bridge, diag,**. Cover and p22 ..... Dec 5
Great Britain: Welsh bridge another variation of welded steel box-girder design,*. p13 ..... Sep 5
Great Britain: England's medieval bridge saved with steel,**. p44 ..... Nov 7
India: new bridge to supplement Calcutta's Howrah Bridge,**. p20 ..... Oct 3
Italy: flood wipes out railroad bridge,*. p19 ..... Sep 26
Italy: gale's damage delays plans for bridge linking Sicily and mainland. CW p7 ..... Oct 31
Nigeria: clay bested, Lagos bridge opening set,**. p71 .. Nov 7
South Africa: concrete arch cantilevers over rugged gorge,**. p14 ..... Aug 8
South Africa: road, rails cross Orange R. on arches,**. p22 ..... Aug 15
Sudan: bridge to link two suburbs of Khartoum. B p34 . Jul 11
Turkey: design for Ayvansaray Bridge, part of Bosporus Bridge project. CW p9 ..... Nov 21
Vietnam: Army's Phu Cuong Bridge over Saigon R. B p24 Jul 18
Vietnam calls bids for Mekong R. hwy bridge. CW p9 ... Aug 22
Yugoslavs plan bridge across Danube R. B p60 ..... Dec 19

BUDGET, see: CONGRESS; CONSTRUCTION BUSINESS
see also subject, e.g. SPACE, WATER RESOURCES

BUILDING CODES AND LAWS, INSPECTION see also: CITIES; ZONING; SPECIFICATIONS & STANDARDS
New York City's new code. CW p9 ..... Jul 4
Honolulu's 350-ft height limit on structures. CW p23 ... Jul 11
Census Bureau proposes one building permit form. p17 . Jul 25
Delays in approval for Detroit's Project Phoenix,**. p34 ..... Aug 29
and e p84 ..... Sep 5
RC p3 ..... Oct 24
Torrance, Calif, Del Amo Center meets L.A. new seismic code requirements,**. p82 ..... Sep 19
Early tests to win bldg dept approval could have expedited Detroit's Project Phoenix. RC p6 ..... Oct 3
City building codes lag behind technology. WO p9 ..... Oct 31
New building code passed in NYC. p22 and e p68 ..... Oct 31
British apt. collapse report cites bldg code flaws. p23 ... Nov 21

BUILDING DESIGN & COMPONENTS
NYC's post office is world's largest,*. p21 ..... Jul 4
Correction p6 ..... Jul 25
Honolulu's 350-ft height limit on structures. CW p23 ... Jul 11
Japan uses real earthquakes to study antiseismic designs of nuclear power plant components. B p21 ..... Jul 25
USSR Ministry of Foreign Trade Europe's tallest bldg. CW p7 ..... Aug 15
Canada's tallest bldg. in Toronto, to top a plaza,*. p21 . Aug 15
Toronto's bridge-shopping center-expressway project,*. p15 ..... Aug 22
Manila: 400-death apt bldg collapse laid to poor design. p16 ..... Aug 22
San Diego's Catamaran Motel tallest load-bearing masonry block bldg on West Coast,**. p43 ..... Aug 29
N.D.'s KTHI TV tower world's tallest structure. RC p4 . Sep 12
Torrance, Calif, Del Amo Center meets L.A. new seismic code, aims for a planning record,**. p82 ..... Sep 19
New structural techniques require increased safety precautions. e p276 ..... Sep 19
L.A.'s twin towers: ductile frames resist earthquake stresses,*. p41 ..... Nov 7
South Calif team studies action of earthquakes on multistory bldgs. p45 ..... Nov 7
L.A. computer predicts quake damage. p48 ..... Nov 7
S. Africa's office bldg's suspended floor structure sets record at 30 stories, diag,**. p34 ..... Nov 14
Pan Am's Kennedy terminal largest in the world for single airline,* p20 ..... Nov 21
Experts meet on the ubiquitous quake: still a lot to learn. p22 ..... Dec 12

• Ceilings and Floors
Floor joist system saves steel at Kansas shopping center,*. p19 ..... Jul 25

• Elevators, Stairs
NYC stairways collapse. CW p7 ..... Oct 31

• Prefabs, Modules and Systems
Cambridge, Mass.: seven-story apt goes up by the numbers,**. p22 ..... Jul 4
Idaho and Calif: lift a folded slab, drop a building,*. p22 ..... Jul 25
Low-cost housing now in France – U.S. next?**. p34 .. Jul 25
Cornell U. report: disposable housing might end shortages. p34 ..... Aug 1
Buffalo, N.Y. union carpenters oppose prefab classrooms. p99 ..... Aug 1
British fear explosions, cut off gas in prefab bldgs. p17 . Aug 22
Rochester: townhouse modules go up in three hours,**. p17 ..... Aug 22
ASCE's systems seminar. B p21 ..... Aug 22
Chicago: with unions' acceptance, prefab housing has its day,*. p47 ..... Aug. 22
URBS: systems building analysis. RCs p8 ..... Aug 29
Chicago: eight townhouses erected in 15 hours,**. p32 . Aug 29
Detroit's Project Phoenix: legend of low-cost housing delays,**. p34 ..... Aug 29
and e p84 ..... Sep 5
RC p3 ..... Oct 24
Early tests to win bldg dept approval could have expedited Detroit's Project Phoenix. RC p6 ..... Oct 3
Systems building overrated, no cheaper than standard units RC p6 ..... Oct 3
Builders warned: embrace systems or be replaced,*. p15 Oct 3
Calif: easily lifted room modules for low-cost housing,**. p26 ..... Oct 10
View of systems building in Europe. RC p16 ..... Oct 17
PCI prepares for systems building. p32 ..... Oct 17
England favors component building over systems. p32 .. Oct 17
and RC p8 ..... Nov 7
URBS building system accepted: components are coming, diag,*. p17 and e p88 ..... Oct 24
and RC p8 ..... Nov 7
and RC p16 ..... Nov 28
URBS cut, but bidders remain. p16 ..... Oct 31
SEF and RS: systems building invades Canada,**. p29 Nov 7
George Air Force Base, Calif: mobile factory to produce housing on site,*. p31 ..... Nov 7
U.S. Post Office eyes prefabrication. p36 ..... Nov 7
Florida's SSP systems building attacked. p33 ..... Nov 28

Engineer's role in systems building. RC p6 ..... Dec 12

BUILDINGS, see also: ACCIDENTS & FAILURES; CITIES; HOUSING; DEMOLITION
Instant Rehabilitation - see: CITIES
Extruded foamed plastic builds a house, diag,**. p22 ... Jul 18
Revised tax laws needed on buildings, property. WO p11 Sep 26
Parameter costs of buildings. p112 ..... Dec 19

• Apartments, Hotels, Restaurants
Cambridge, Mass.: seven-story apt goes up by the numbers, **. p22 ..... Jul 4
Habitat Puerto Rico cuts cost by 80%,**. p15 ..... Jul 18
British fear explosions, cut off gas in prefab bldgs. p17 . Aug 22
San Diego's Catamaran: block boxes add up to 13-story motel,**. p43 ..... Aug 29
Atlanta's Regency Hotel cantilevers out, around,*. p16 . Sep 5
Denver park apts restricted to nine stories to preserve view. B p22 ..... Sep 12
Hawaii: joint venture to develop $20-m hotel complex. B p22 ..... Sep 12
Bronx, N.Y.'s Co-Op City: only the tenants will like it,**. p28 ..... Sep 12
British apt. collapse report cites bldg code flaws. p23 ... Nov 21
Buenos Aires apt bldg collapse kills three. CW p7 ..... Dec 5

• Culture, Entertainment, Monuments, Meetings, Sports
Melbourne's Victorian Arts Center is tops, diag,**. p30 . Jul 4
Ohio's Blossom Music Center: ingenious structure solves acoustical challenge,**. Cover and p42 ..... Jul 11
Sydney opera cost rises again,*. p11 ..... Aug 8
Picasso's prestressed sculpture,**. Cover and p20 ..... Aug 8
and RC p38 ..... Sep 19
Sydney Opera House: sketches vs architecture. e p76 ... Aug 15
Form fits function in Princeton gymnasium design,**. Cover and p24 ..... Aug 22
Seattle's stadium outgrows funds before design. p48 .... Aug 22
Phila sports stadium up for bids. p69 ..... Sep 5
Munich builders of '72 Olympics take a running start,*. p80 ..... Sep 19
Sydney Opera lowers curtain on cost increases,*. p17 .. Sep 26
Cincinnati stadium slowed by carpenter shortage. CW p15 Oct 10
Salt Lake City's timber arena dome is world's largest,**. p44 ..... Oct 10
On bids for Phila stadium. RC p16 ..... Oct 17
Egypt's Abu Simbel Temple is back together,**. p26 .. Oct 24
Circus tent gym roof for Iowa's Graceland Coll was no circus,**. p40 ..... Oct 24
U.S. contract let for Expo '70 pavilion,*. p21 ..... Nov 14
Hawaii erects replica of Japanese temple,**. p42 ..... Nov 28
Seattle: suit filed over proposed stadium. p23 ..... Dec 12

• Federal, Municipal, State
NYC's post office is world's largest,*. p21 ..... Jul 4
Correction p6 ..... Jul 25
Space for postal substation beneath Sacramento freeway B p34 ..... Jul 11
USSR Ministry of Foreign Trade-Europe's tallest bldg. CW p7 ..... Aug 15
Vienna's UN City competition. B p38 ..... Aug 29
Inaugural platform with related facilities to cost $320,000. CW p6 ..... Sep 26
House votes down purchase of site for third Senate office bldg. CW p11 ..... Oct 3
Calif: walls move when VA hospital grows, diags,*. p37 . Oct 10
U.S. Post Office eyes prefabrication. p36 ..... Nov 7
U.S. Capitol moves nearer collapse, diag,**. p48 ..... Nov 28

• Hangars
Minn. hyperbolic paraboloid hangar fits jets to a tee,**. Cover and p46 ..... Aug 1
London: Boeing hangar's space frame roof will span 453 ft,**. p13 ..... Aug 15
Burns and Roe, Inc. also worked on Pan Am's Kennedy Intl Airport maintenance base. RC p8 ..... Aug 29
Far East's largest hangar in Hong Kong. B p36 ..... Oct 17

• Hospitals
Austria: vierendeel trusses aid Vienna hospital support, **. p40 ..... Aug 29
Defense program spurs experimental building. WO p 13 and e p92 ..... Oct 3
Calif: walls move when VA hospital grows,diags,*. p37 . Oct 10
Medical building costs. p114 ..... Dec 19

• Industrial plants
New oil refinery for Hawaii. CW p23 ..... Jul 11
Puerto Rico plans Sun Oil Co. petrochemical complex. B p21 ..... Jul 25
Detroit warehouse built in mud season. B p14 ..... Aug 8
Name of contractor on Ala. aluminum mill job. RC p6 .. Aug 22
Vienna Trade Fair's mushroom pavilion,**. p22 ..... Oct 3
N.J. builds industrial park, Port Jersey. p21 ..... Dec 12

• Laboratories, Libraries, Communications, Research
Calif. library roof truss doubles as op art,**. p32 ..... Aug 8

• Offices
New York's World Trade Center - see: CITIES, New York
Controversy continues re proposed tower atop NYC's Grand Central Terminal. CW p23 ..... Jul 11
NYC Mayor's plan re new tower atop Grand Central Terminal. CW p9 ..... Jul 25
Plans for Dutch World Trade Center in Rotterdam. B p14 Aug 8
Canada's tallest bldg, in Toronto, to top a plaza,*. p21 . Aug 15
Vienna's IBM Haus constructed of precast and cast-in-place concrete,**. p28 ..... Aug 15
Chicago will have Standard Oil Co's $100-m office bldg. CW p26 ..... Aug 29
Harlem's first skyscraper, Triboro Plaza,*. p30 ..... Aug 29
Overloaded floor frame crashes at NYC office bldg,*. p14 Sep 12
Bulkhead slides into excavation of L.A. insurance office bldg,*. p18 ..... Sep 26
Portland, Ore's Georgia-Pacific Bldg: columns of grouted aggregate,**. p31 ..... Sep 26
Fight against second tower atop NYC's Grand Central Terminal. CW p11 ..... Oct 3
Precast panels almost cast in place at NYC warehouse-office bldg,**. p38 ..... Oct 3
Osaka office bldg bordering excavation tilts backwards,*. p30 ..... Oct 17
L.A.'s Atlantic Richfield Plaza: twin towers get ductile frames,*. p41 ..... Nov 7
Suits halt Fort Wayne, Ind. building at 18th floor. p45 . Nov 7
San Fran: first Embarcadero tower rises,*. p48 ..... Nov 7
S. Africa: suspended floor structure sets record at 30 stories, diag,**. p34 ..... Nov 14
Baton Rouge: columns on mat support La. Natl Bank,*. p21 ..... Nov 21
World Trade Center planned for Rotterdam*. p23 ..... Nov 21
Manhattan surges skyward,**. Cover, p72 and e p164 .. Nov 28
Mirrored glass covers bldg of Dallas jewelry firm,*. p13 . Dec 5
Indiana Natl Bank tower: concrete pumped 504 ft straight up to a record,**. p26 ..... Dec 5
and RC p6 ..... Dec 12
Winds topple steel frame for Greenwich, Conn. office bldg. p18 ..... Dec 12

• Schools
NYC school will be base for 35-story apt tower at no cost to City. p78 ..... Jul 18
Calif stipulates school structures must meet earthquake and fire safety standards. CW p27 ..... Aug 1
Buffalo,N.Y. union carpenters oppose prefab classrooms. p99 ..... Aug 1
NYU's Technology II: precast facade panels are load bearing,**. p30 ..... Aug 8
III: architect judged at fault in "sinking school" case. p21 ..... Aug 15
URBS: systems building analysis. RCs p8 ..... Aug 29
HUD loans to colleges for student housing. B p22 ..... Sep 12
Money-saving urethane foam insulation is cover-all at Juilliard School of Music,**. p26 ..... Sep 26
NYU's loadbearing precast reinforced concrete panels are not NYC's first. RC p6 ..... Oct 3
URBS Building system accepted: components are coming, diag,*. p17 and e p88 ..... Oct 24
and RC p8 ..... Nov 7
and RC p16 ..... Nov 28
URBS cut, but bidders remain. p16 ..... Oct 31
Groundbreaking for State U of NY at Buffalo. CW p25 . Nov 7
SEF and RAS: systems building invades Canada,**. p29 Nov 7
Florida's SSP systems building attacked. p33 ..... Nov 28
Mass student housing rises at U of Penn,*. p43 ..... Nov 28
NYC: Columbia U's building plans include neighbors,*. p21 ..... Dec 12

• Shops, Shopping Centers
Floor joist system saves steel at Kansas shopping center,*. p19 ..... Jul 25
Toronto: shops will hang from bridge. p15 ..... Aug 22

• Storage, Silos, Warehouses, Tanks
Headache ball a headache, so dynamite does the job on Pittsburgh warehouse,**. p84 ..... Sep 19
Oakland, Calif: Utility District settles on water tank collapse. p18 ..... Sep 26
Precast panels almost cast in place at NYC warehouse-office bldg,**. p38 ..... Oct 3
San Antonio warehouse collapse cause investigated. p23 Nov 21
NYC: warehouses under demolition fail,*. p18 ..... Dec 12

• Terminals
Dallas-Fort Worth jetport terminal plan evaluated. CW p7 ..... Jul 18
Dallas-Fort Worth jetport: study to be sure new terminal is best,*. p20 ..... Jul 25
Need for new facilities for jumbo jets. e p120 ..... Aug 1
Architects chosen for Atlanta's Airport terminal. CW p7 Sep 12
Alternatives for Dallas-Fort Worth jetport terminal design. CW p6 ..... Sep 26
New design for Dallas-Fort Worth jetport terminal,*. p17 Oct 3
Dallas-Fort Worth terminal concept a winner,*. p31 .... Oct 17
Criticism of Dallas-Fort Worth terminal redesign. RC p6 Nov 21
Pan Am's Kennedy terminal largest in the world for single airline,*. p20 ..... Nov 21
NYC's passenger ship terminal cleared,*. p35 ..... Nov 28

• Towers, Stacks, Chimneys
Main break cracks Dulles Airport tower. p16 ..... Aug 22
N.D.'s KTHI TV tower world's tallest structure. RC p4 . Sep 12
U. S.-USSR height competition,*. p92 ..... Sep 19
Natural draft cooling tower for Portland's Trojan Nuclear Plant. B p25 ..... Nov 21
London's Big Ben Tower is tilting. CW p27 ..... Nov 28

BUREAU OF PUBLIC ROADS, see: HIGHWAYS

BUREAU OF RECLAMATION, see: SOIL; WATER RESOURCES

C

CAISSONS, COFFERDAMS, see: BRIDGES; DAMS; SOIL

CANALS, CHANNELS
Federal state, local agencies' melee over Calif's Miners Ranch Canal. p14 ..... Aug 22
Mississippi channelization, unit prices. p125 ..... Dec 19

• Foreign
Milan streets fall into canals,**. p32 ..... Jul 4
Hovercraft ferry jets across English Channel. B p14 .... Aug 8
Budget cuts squeezing biologists out of studies of proposed new interoceanic canal. WO p9 ..... Aug 15
Finland: Saimaa Canal completed. B p21 ..... Aug 22
Germany's Europe Canal to link three rivers, map,**. p48 Aug 29
Study group favoring Panama sea-level canal. p14 ..... Sep 19
Panama coup slows interocean canal. p20 ..... Oct 24
Argentina: canal in river aids boat traffic, map,*. p76 .. Nov 7
Canada: proposal for Welland Canal superlocks postponed. B p80 ..... Dec 19

CAPITAL SPENDING, see: ECONOMY

CAUSEWAYS, see: BRIDGES

CITIES, see also: BUILDING CODES; HOUSING; ZONING; PLANNING
Kaiser wins HUD's In-City contest for low-cost housing in model cities. p13 ..... Jul 4
e p104 ..... Jul 11
Model city program: what is it? p14 ..... Jul 4
T.F. Rogers brings the space age to HUD,*. p14 ..... Jul 4
NAACP girds for model cities showdown,*. p54 ..... Jul 4
HUD Grants hinge on regional planning. p13 ..... Jul 18
$200-m allocated for model city planning. p15 ..... Jul 25
Advance funding for urban mass transit. p20 ..... Jul 25
Labor takes model cities lead,**. p74 ..... Jul 25
Planners needed for model cities. p35 ..... Aug 1
Congress reelizes new towns need help. p106 ..... Aug 1
The model cities challenge to the industry. e p120 ..... Aug 1
Detroit's AIA questions industry's right to share in model cities in view of costly wage settlements. CW p5 ..... Aug 8
Japan to integrate urban planning agencies into new National Development Ministry. B p14 ..... Aug 8
New housing bill: new hope for new towns. e p76 ..... Aug 8
Private groups on urban bandwagon: Nixon too. WO p9 . Aug 15
Nominees for partnership to tap private money for ghetto housing. CW p9 ..... Aug 22
Big cities escape ban on high-rise public housing. WO p11 Aug 22
Which 20 cities for In City program? Nobody ready to say. WO p11 ..... Aug 22
Industry told it heads for economic suicide; fails with regard to model cities,*. p49 ..... Aug 22
and RC p3 ..... Sep 26
City rebuilding costs less when done by local govt. RC p8 Aug 29
Model city labor accord for Boston,*. p12 ..... Sep 5
HUD selects 33 more model cities, table. p13 ..... Sep 12
Model cities headed for trouble. p61 ..... Sep 12
Public land agencies pushed to control urban growth. p256 Sep 19
Fiscal '69 makes a thud at HUD. p20 ..... Sep 26
Senate committee examines plans to assist urban lending. WO p13 ..... Oct 3
In-City program leads the way to systems approach to building. . p15 ..... Oct 3
New AFL-CIO attack on urban problems,*. p72 ..... Oct 3
Renewal: promises, promises; graph, table on top 18 cities. p19 ..... Oct 10
HUD's T.F. Rogers: instant city expert,*. Cover and p36 Oct 17
Where HUD's research money goes - table. p42 ..... Oct 17
Instant housing goes up in Rochester. p96 ..... Oct 17
HUD warns black separatists in model cities,*. p19 .... Oct 24
Construction industry: urban crisis demands changes. p19 Oct 24
Cities and airports may float offshore. WO p9 ..... Oct 31
NYC negotiating for new town on Staten Island. B p36 . Nov 7
Lawrence Halprin: cities don't have to be ugly,**. Cover and p63 ..... Nov 7
Model cities: safety's only one problem,**. p133 ..... Nov 7
Landscape architects launch study of their profession. CW p6 ..... Nov 21
Urban Institute starts thinking,**. p13 ..... Nov 21
Albert Mayer: all need a better environment,*. p15 .... Nov 21
Fort Lincoln new town housing experiments in Washington, D.C.,**. p24 ..... Nov 21
New town: Columbia, Maryland, diag,**. Cover and p26 Nov 21
NY metropolitan area: regional plan urges new urban centers, suburbs. p34 ..... Nov 28
Model cities reach total of 147. p36 ..... Nov 28
N.J. plans new city for Hackensack R. marshes, map. p13 Dec 5
HUD changes policies for renewal, housing. WO p13 .... Dec 12
N.J.'s Hackensack Meadow reclamation: question of priority. e p84 ..... Dec 12
Agnew worries the mayors,*. p58 ..... Dec 19
Douglas commission sets another housing goal,*. p59 ... Dec 19
Antarctic constructors stress urban renewal, map,**. Cover and p62 ..... Dec 19

• By Name

Atlanta, Ga.
Mobile homes for those temporarily displaced by renewal B p21 ..... Aug 22
Transit system (MARTA) trips on cost. p74 ..... Oct 3
Transit system safe on ballot. CW p13 ..... Oct 24

Baltimore, Md.
Team approach sets pattern for road design, map,** Cover and p26 ..... Sep 12
and e p276 ..... Sep 19
Transit study unveiled. CW p13 ..... Oct 24
Unveils transit plan, map. p15 ..... Oct 31

Birmingham, Ala.
Birmingham-Jefferson Civic Center to include four major structures. B p21 ..... Aug 22

Chicago, Ill.
With unions' acceptance, prefab housing has its day,*. p47 Aug 22
Eight townhouses erected in 15 hours,**. p32 ..... Aug 29
18 acres downtown for urban renewal. CW p51 ..... Dec 19

Columbia, Md.
New town: American Dream in one big package, diag,**. Cover and p26 ..... Nov 21

Dallas, Tex.
$200-m privately financed urban redevelopment project. B p23 ..... Sep 5

Detroit, Mich.
Project Phoenix legend of low-cost housing delays,**. p34 Aug 29
e p84 ..... Sep 5
RC p3 ..... Oct 24

Fresno, Calif.
Aerospace firm to plan renewal. B p14 ..... Aug 8

Hong Kong
New housing projects in Kwai Chung and Kwai Hing. B p23 ..... Sep 5

Honolulu, Hawaii
Downtown Honolulu goes high, modern,**. p36 ..... Aug 1

Kansas City, Mo.
Crown Center will transform 85 acres of downtown Kansas City by 1983,*. p17 ..... Jul 25

Los Angeles, Calif.
Sales tax approved for SCRTD finance. p106 ..... Aug 1
Atlantic Richfield Plaza: twin towers get ductile frames,*. p41 ..... Nov 7

Miami, Fla.
Plan for "high-rise community" near Biscayne Bay. B p21 Aug 22

Milan, Italy
Milan streets fall into canals,**. p32 ..... Jul 4

Moscow, USSR
Moscow is replanning to repopulate and humanize,*. p30 Jul 11

Mount Vernon, N.Y.
$25-m redevelopment program by Lefrak. B p16 ..... Aug 15

Munich, Germany
Builders of '72 Olympics take a running start,*. p80 ... Sep 19

New York, N.Y.
DOT, HUD and HEW to share in Brooklyn "linear city" financing and planning. CW p9 ..... Jul 4
World's largest post office,*. p21 ..... Jul 4
Correction p6 ..... Jul 25
School will be base for 35-story apt tower at no cost to city. p78 ..... Jul 18
25-block, $190-m redevelopment in lower Manhattan. CW p27 ..... Aug 1
First steel placed for World Trade Center. CW p5 ..... Aug 8
Harlem's first skyscraper, Triboro Plaza,*. p30 ..... Aug 29
Bronx, N.Y.'s Co-Op. City: only the tenants will like it,**. p28 ..... Sep 12
World Trade Center: tallest towers' foundation: water out, trains in, diag,**. p30 ..... Oct 31
NYC negotiating for new town on Staten Island. B p36 . Nov 7
Regional plan urges new urban centers, suburbs, map. p34 Nov 28
Manhattan surges skyward,**. Cover, p72 and e p164 .. Nov 28

Osaka, Japan
Huge space frame dominates Expo '70,**. p22 ..... Jul 25
U.S. contract let for Expo '70 pavilion,*. p21 ..... Nov 14

Philadelphia, Pa.
Private contractors speed city housing rehabilitation. p21 Oct 10
Delaware R. fill forms 70-acre complex, Penn's Landing,**. p25 ..... Oct 24

Pittsburgh, Pa.
Receives first ASCE Comprehensive Program Award. e p100 ..... Oct 10

Rochester, N.Y.
Instant housing goes up,*. p96 ..... Oct 17

Rotterdam, Netherlands
Plans for World Trade Center,*. p23 ..... Nov 21

St. Louis, Mo.
S&Ls plan housing for city slums. p141 ..... Nov 7

San Francisco, Calif.
BARTD, CEs in fee spat. p48 ..... Jul 4
BARTD: slurry-trench retaining walls protect subway station,**. p44 ..... Jul 11
Legislature leaves BARTD strapped. p14 ..... Aug 22
Double pour for BARTD roadbed,**. p34 ..... Aug 29
Nation's first linear transit park under BARTD elevated section. B p38 ..... Aug 29
Gross receipt tax. p69 ..... Sep 5
BARTD to suspend bids for lack of funds from legislature. CW p6 ..... Sep 26
BARTD: quick sale of bond anticipation notes prompted by Watson Amendment. CW p11 ..... Oct 3
BARTD directors to seek aid from Gov. Reagan. p74 and e p92 ..... Oct 3
Proposal for single agency over bridges, hwys and transit systems. CW p23 ..... Oct 17
First Embarcadero tower rises,*. p46 ..... Nov 7
BARTD contracts for escalators. B p25 ..... Nov 21
BARTD gets DOT grant. CW p27 ..... Nov 28
Grout curtain seals excavation at BARTD tunnel site,**. p67 ..... Nov 28
Tax may solve BARTD crisis. p149 ..... Nov 28

San Juan, Puerto Rico
Habitat Puerto Rico cuts cost by 80%,**. p15 ..... Jul 18

Schaumburg, Ill.
Plans for $80-m community. p26 ..... Oct 3

Toledo, Ohio
Housing for elderly former mental patients. B p23 ..... Sep 5

Toronto, Canada
ITT to build $40-m hotel, entertainment and shopping project. CW p7 ..... Jul 18
Canada's tallest bldg to top a plaza,*. p21 ..... Aug 15
Shops will hang from bridge,*. p15 ..... Aug 22

Torrance, Calif.
Del Amo Center boasts a structural first, aims for a planning record,**. p82 ..... Sep 19

Troy, Mich.
Auto dealers' Chrysler Realty to build residential development. B p22 ..... Sep 12

Vienna, Austria
Two contractors establish joint venture to develop city block complex,**. p28 ..... Aug 15
UN City competition. B p38 ..... Aug 29
Trade Fair's mushroom pavilion,**. p22 ..... Oct 3

Washington, D.C.
Fort Lincoln new town housing experiments show high initial cost,**. p24 ..... Nov 21

CIVIL RIGHTS, see: ETHICS

CIVILIAN INDUSTRY TECHNOLOGY, see CONSTRUCTION INDUSTRY; RESEARCH AND TESTS

COATINGS, see ADHESIVES, COATINGS

COLUMNS, see BEAMS & COLUMNS; CONCRETE; STEEL

COMMUNICATIONS, ELECTRONICS, AUTOMATION

• Automation, Computers, Electronic Devices
Computer cataloged housing. CW p23 ..... Jul 11
Colorado installs electronic traffic counting system. B p34 Jul 11
Gifford Albright's MODCON computer world, diag,**. Cover and p28 ..... Jul 18
Computers integrate freeway and arterial street traffic in Dallas. p21 ..... Aug 15
NY utilities' computerized communic center to monitor and control power use. p16 ..... Aug 22
Computer prefabricates walls,*. p23 ..... Oct 3
San Fran: electronics helps dredges place underwater tubes. p21 ..... Oct 31
OSU develops fully automatic electronic controls for autos. B p36 ..... Nov 7
L.A. computer predicts quake damage. p46 ..... Nov 7
Service gives estimators computer data by teletype. p51 . Nov 7
New electronic systems for improved hwy safety. p20 .. Nov 14

• Radar, Radio, TV
Collapse of Cape Kennedy antenna due to faulty installation. B p21 ..... Jul 25
Colo State Univ offers pre-engineering by TV. B p38 ... Aug 29
N.D.'s KTHI TV tower world's tallest structure. RC p4 . Sep 12

COMPUTERS, see: COMMUNICATIONS, ELECTRONICS

CONCRETE, see also: PAVING
U of Wis concrete creep study in bldgs close to home. p19 ..... Jul 25
Mexico: water-filled oil drums stabilize cable-suspended roof during concrete pouring,**. p14 ..... Aug 15
Vienna's IBM Haus constructed of precast and cast-in-place concrete,**. p28 ..... Aug 15
Princeton U finds microconcrete technique useful teaching tool,*. p21 ..... Aug 22
Double pour for San Francisco BARTD roadbed,**. p34 Aug 29
Courses at U of Md and U of Calif, Berkeley. B p86 .... Sep 19
Uruguay tries grouting cracks in Canelon Grande Dam,**. p48 ..... Oct 17
Oakland: grout curtain seals excavation at BARTD tunnel site,**. p67 ..... Nov 28
Concrete pumped 504 ft straight up to a record at Indiana Natl Bank tower,**. p26 ..... Dec 5
and RC p6 ..... Dec 12

• Aggregates
Portland, Ore's Georgia-Pacific Bldg: columns of grouted aggregate,**. p31 ..... Sep 26
and corrections RC p10 ..... Oct 10
RC p4 ..... Oct 31

• Cement
Fast-Fix cement patch carries plane in 30 minutes. p24 . Jul 4
Re "Cement Formulation Reduces Early Shrinkage (3/7 p50). RC p6 ..... Jul 25
"Jet-Set" cement sets in minutes, not hours. p30 ..... Oct 24

• Forms & Falsework
DeCordova Dam is hollow puzzle of formwork,**. p48 . Aug 1

• Precast, Prestressed
Concrete panel framing system forms low-cost housing units in Washington, D.C.,**. p42 ..... Aug 1
Picasso's prestressed sculpture,**. Cover and p20 ..... Aug 8
and RC p38 ..... Sep 19
NYU's Technology II: precast facade panels are load bearing,**. p30 ..... Aug 8
Name of contractor on Ala. aluminum mill job. RC p6 .. Aug 22
Prestressed grout rejuvenates old oil platforms,**. p21 . Sep 12
NYU's loadbearing precast reinforced concrete panels are not NYC's first. RC p6 ..... Oct 3
PCI prepares for systems building. p32 ..... Oct 17

• Reinforced
Does the chemistry of reinforcing bars need better control? e p116 ..... Oct 17
and RC p6 ..... Nov 21
and RC p4 ..... Dec 5

CONGRESS; FEDERAL ISSUES see also subject discussed
House quits soon; leaders itch for the hustings. WO p25 . Jul 11
May demand seasonality study. p76 ..... Jul 25
Smallest foreign-aid bill in history expected. WO p29 ... Aug 1
GOP quietly planks its platform,**. p9 ..... Aug 8
Cuts may reshape foreign-aid program. p61 and e p76 Aug 15
Economy drive lowers ax on civil construction. WO p11 Aug 22
Democrats nail down a platform,**. p29 ..... Aug 29
Congress returns to tie up loose ends. WO p9 ..... Sep 5
Party platforms draw the battle lines,**. p11 ..... Sep 5
Construction freeze until nearly end of this year. WO p9 Sep 12
Money bills passage assured in Congress' final weeks,**. p11 ..... Sep 12
Bans construction on riverside land in 22 states. B p20 Sep 26
Tells Pentagon to estimate accurately. p21 ..... Sep 26
Study group urges grant-in-aid reform. p66 ..... Sep 26
House votes down purchase of site for third Senate office bldg. CW p11 ..... Oct 3
Senate committee examines plans to assist urban lending. WO p13 ..... Oct 3
Senate ups foreign aid; compromise anticipated. WO p13 Oct 3
Congress cleans house; readies for adjournment. WO p17 Oct 10
ENR presidential poll. p27 ..... Oct 10
Cutting back on President's budget won't be easy. WO p25 Oct 17
Measure to make federal aid more compatible with local programs. WO p25 ..... Oct 17
Breaks camp, heads for home; listing of major legislation. p28 ..... Oct 17
Positions emerge from presidential campaign,**. p11 ... Oct 31
ENR presidential poll results. p12 and e p68 ..... Oct 31
RC p16 ..... Nov 28
Lobby blamed for pollution bill death. p23 ..... Oct 31
Whom will Nixon choose for his Cabinet? WO p13 ..... Nov 14
Nixon may benefit construction, table,**. p15 ..... Nov 14
Election: some made it, some didn't,**. p18 ..... Nov 14
Nixon will need strong administration. e p92 ..... Nov 14
Cabinet members announce post-Johnson plans. WO p11 Nov 21
Ten Nixon task forces eye domestic programs. WO p29 . Nov 28
Will Democrats attempt to lock up 1970 budget? WO p9 Dec 5
Nixon picks pragmatic Cabinet,**. p65 ..... Dec 19
Foreign aid faces major surgery. p170 ..... Dec 19
Contractors in the Cabinet. e p186 ..... Dec 19

CONSERVATION, see: PLANNING AND ENVIRONMENT

CONSTRUCTION BUSINESS, see also: ECONOMY
Recruiting for public works takes selling. e p104 ..... Jul 11
Military construction will slow with nuclear arms race. p14 ..... Jul 18
Easier financing to spur public works. p78 ..... Jul 18
Senate boosts public works money after House hacking. WO p11 ..... Jul 25
Rivers and Harbors bill goes to conference. p15 ..... Jul 25
Military austerity: House unit chops Pentagon construction. p21 ..... Jul 25
Commerce to issue foreign investment policy. WO p29 .. Aug 1
and RC p38 ..... Sep 19
Public works and AEC bill is lean on pork this year. p32 Aug 1
Construction of facilities for new plants and equipment should not be an afterthought. e p120 ..... Aug 1
Foreign outlays will rise 10%, tables. p61 ..... Aug 8
Economy drive lowers ax on civil construction. WO p11 Aug 22
A big market in federal design work, table. p21 ..... Sep 5
Bid competition disappearing due to flood of public works jobs. p69 ..... Sep 5
Construction freeze until nearly end of this year. WO p9 Sep 12
Natl Academy of Sciences calls for civil service engineers' fed job supervision. WO p9 ..... Sep 12
Pentagon tries turnkey housing. p83 ..... Sep 19
AID dusts off proposals to promote private help to developing countries. WO p11 ..... Sep 26
Congress tells Pentagon to estimate accurately. p21 .... Sep 26
Pentagon to attack social problems as secondary goal of military spending. WO p13 and e p82 ..... Oct 3
As banks cut prime rate, bond yields will fall. p17 ..... Oct 3
Ousted Peru leader fears work halt,*. p35 ..... Oct 17
Vietnam bombing halt affects construction little. WO p27 Nov 7
George Air Force Base, Calif: mobile factory to produce housing on site,*. p31 ..... Nov 7
Contractors score Canada's policies. p136 ..... Nov 7
Nixon may benefit construction, table,**. p15 ..... Nov 14
U of Pittsburgh new Graduate Center: generalists needed in public works. p24 ..... Nov 14
Crucial manpower needs in public works. e p76 ..... Nov 21
Construction spending to rise. CW p27 ..... Nov 28
Construction climbs out of slump, chart. p11 ..... Dec 5
U.S. contractors cautious on Franc crisis. p56 ..... Dec 5
Construction jump of 7% seen. p61 ..... Dec 5
Military spent $8.8 billion on canceled projects. e p84 .. Dec 12
USSR 1969 economic plan affects construction. CW p51 Dec 19
Department of Defense cuts back construction. WO p53 Dec 19

• Advanced planning
June construction plans off 12%, table. p53 ..... Jul 4
July plans at two-year low, table. p62 ..... Aug 8
August planning pace quickens, table. p70 ..... Sep 5
Plans drift lower, table, p88 ..... Oct 10
October new plans hit '68 high, table. p141 ..... Nov 7
November plans hit new high, table. p62 ..... Dec 5

• Costs
Materials costs rise 9%. CW p7 ..... Aug 15
Contractors and owners confer on soaring cost. WO p27 Aug 29
Rising wages make for rapid increase of construction costs, table. p100 ..... Aug 29
Third quarterly cost issue. pp100-178 ..... Sep 19
Material, wage hikes hit contractors hard. p100 ..... Sep 19
Contractors pass on their higher costs. p103 ..... Sep 19
Building cost indexes:
Contractors' selling price indexes p103 ..... Sep 19
ENR cost indexes for 22 cities p103 ..... Sep 19
Electric, gas plants, Handy-Whitman p110 ..... Sep 19
Heavy construction cost indexes:
Highway p104 ..... Sep 19
Irrigation and hydro p107 ..... Sep 19
Sewerage p108 ..... Sep 19
The Four M's - outlook for Manpower, Materials, Machinery & Money:
Manpower
1968 wage hikes are costliest yet p113 ..... Sep 19
ENR wage averages for 20 cities p113 ..... Sep 19
Average hourly earnings p115 ..... Sep 19
Wage rates in cities not covered by ENR p116 ..... Sep 19
ENR wage indexes for 34 cities p120 ..... Sep 19
ENR annual survey of wage rates p127 ..... Sep 19
Compensation insurance rates p135 ..... Sep 19

Materials
Price rises rival wage climb p138 ... Sep 19
ENR cost indexes for 20 cities p138 ... Sep 19
Lumber, plywood, glass prices p141 ... Sep 19
Machinery
Price uptrend is slowing p145 ... Sep 19
List price indexes, BLS p145 ... Sep 19
Money
Interest rates ease slightly p146 ... Sep 19
Contractors' problems on overseas jobs. p148 ... Sep 19
World survey of wages, prices, costs. p152 ... Sep 19
Costs in North American cities. p156 ... Sep 19
Service gives estimators computer data by teletype. p51 . Nov 7
Construction process small part of total housing costs. e p76 ... Nov 21
Fourth quarterly cost issue. pp68-126 ... Dec 19
Racing cost inflation accelerates. p68 ... Dec 19
Contractors' selling prices rise faster. p70 ... Dec 19
ENR cost indexes for 22 cities. p71 ... Dec 19
Highway bids show slight dip. p72 ... Dec 19
Highway bid price indexes in 10 states and for the U.S. p72 ... Dec 19
Irrigation and hydro costs, indexes. p76 ... Dec 19
Sewerage and waterworks costs:
Sewage treatment plant indexes, 20 cities p81 ... Dec 19
Sewer line indexes, Interior Dept p81 ... Dec 19
Water utility indexes, Handy-Whitman p82 ... Dec 19
Railroad costs:
Road and building indexes by region, ICC p84 ... Dec 19
Unit prices for bridges and tunnels p84 ... Dec 19
The Four Ms - outlook for Materials, Machinery, Money & Manpower:
Materials:
1968 rise is sharpest in 18 years p89 ... Dec 19
ENR price indexes for 20 cities p90-91 ... Dec 19
BLS materials price indexes p92 ... Dec 19
Lumber, plywood, glass prices p96 ... Dec 19
Clay product and roofing prices p101 ... Dec 19
Machinery:
Price trends will roll upward p102 ... Dec 19
List prices indexes, BLS p103 ... Dec 19
Money:
Costs squeeze owners p104 ... Dec 19
Manpower:
Wage hikes rock costs p106 ... Dec 19
ENR wage indexes for 20 cities p107 ... Dec 19
Parameter estimate guides costs, by A.P. McNulty,**. p110 Dec 19
Parameter costs of buildings. p112 ... Dec 19
Medical building costs up. p114 ... Dec 19

• Financing, see also: BONDS
Calif bill transfers oil royalties to Water Project. p33 ... Jul 11
NYC school will be base for 35-story apt tower at no cost to city. p78 ... Jul 18
Planning consultant goes public. p73 ... Jul 25
Voters put more money in state purses. p61 ... Nov 21

• Forecast
Outlook for '69 construction, graphs, tables. p13 ... Sep 26

• Foreign, see: INTERNATIONAL

• Materials and Labor Prices
Cement, aggregate, concrete; paving brick, block asphalt, road oils.
p38 Jul 4, p46 Aug 8, p46 Sep 5, p64 Oct 10, p103 Nov7, p44 Dec 5.
Iron and steel; pipe and tubing.
p70 Jul 11, p49 Aug 15, p42 Sep 12, p73 Oct 17, p55 Nov 14, p52 Dec 12.
Lumber; glass; explosives; piles; chemicals.
p68 Jul 18, p41 Aug 22, p141 Sep 19, p47 Oct 23, p47 Nov 21, p96 Dec 19.
Tile, brick, lime; Paint, roofing; Plaster, vermiculite metal bldg. sheets.
p60 Jul 25, p73 Aug 29, p43 Sep 26, p39 Oct 31, p100 Nov 28, p101 Dec 19.
Wage rates; Bldg. board & lath and insulation.
p73 Aug 1, p74 Aug 29, p55 Oct 3, p40 Oct 31, p100 Nov 28.

• Scoreboard
Wage rates, Material prices, ENR index review.
p47 Jul 4, p51 Aug 8, p61 Sep 5, p82 Oct 10, p128 Nov 7, p61 Dec 5.
ENR cost indexes in 22 cities; construction bidding volume.
p83 Jul 11, p95 Aug 1, p55 Aug 15, p52 Sep 12, p93 Oct 17, p68 Nov 14, p63 Dec 12.
Backlog and industrial plant planning.
p75 Jul 18, p45 Aug 22, p249 Sep 19, p64 Oct 23, p67 Nov 21, p167 Dec 19.
Bidding volume by type and region, state and municipal bond sales, equipment orders.
p71 Jul 25, p99 Aug 29, p55 Sep 26, p55 Oct 31, p68 Nov 14, p136 Nov 28.
Charts.
p89 Oct 3.

• Unit Prices
Concrete sewer contract in Calif. is popular. p37 ... Jul 4
Tight bidding on Tenn. waterworks. p37 ... Jul 4
Unit prices for highways in Wyo. during 1967. p69 ... Jul 11
Storm sewer channel in Neb. p 69 ... Jul 11
Asphaltic road in W. Va. p67 ... Jul 18
Widening Little Rock, Ark. streets. p59 ... Jul 25
Three-lane bay state highway, Mass. p68 ... Aug 1
Mo. road and bridge work. p43 ... Aug 8
Interstate job in N.C. p44 ... Aug 15
Tight bids on Ga. highway. p40 ... Aug 22
NYC subway substation. p70 ... Aug 29
Temporary lock on the Ohio R. p45 ... Sep 5
Bituminous wins La. road. p41 ... Sep 12
Calif. road and bridge job. p163 ... Sep 19
Md. sewer is over estimate. p164 ... Sep 19
Interstate viaduct in Hawaii. p166 ... Sep 19
New shopping center requires Ill. street improvements. p168 ... Sep 19
Wide spread on bids for Ore. sanitary sewer. p172 ... Sep 19
Excavation price takes county road in Idaho. p176 ... Sep 19
Va. road job won by 0.5%. p42 ... Sep 26
Mich. road and sewer job. p54 ... Oct 3
Wash. road, dam job won by 18%. p62 ... Oct 10
Mont. road under estimate. p71 ... Oct 17
Bids spread for La. road. p46 ... Oct 24
NYC transit job awarded. p38 ... Oct 31
Mont. flood water conduit. p101 ... Nov 7
Kan. sewer bid under estimate. p101 ... Nov 7
Chicago sewer tunnel in rock. p53 ... Nov 14
Replacing taxiways at Pope AFB. p53 ... Nov 14
U.S. capital highway bridge job. p46 ... Nov 21
Two bids on Pa. dam p99 ... Nov 28
NYC street job won by 4%. p41 ... Dec 5
Mont. runway and lighting job. p51 ... Dec 12
Conn. highway and bridges. p116 ... Dec 19
Major street widening starts in Des Moines. p121 ... Dec 19
Contractor wins Hawaii road grading by 20%. p123 ... Dec 19
Chasm between bids on Va. dam, reservoir. p124 ... Dec 19
Miss. channelization bids 12% below estimate. p125 ... Dec 19
Mon. forest road 14% under estimate. p126 ... Dec 19

CONSTRUCTION INDUSTRY
see also: SPECIFICATIONS & STANDARDS
BUILDING CODES & INSPECTION
RESEARCH & TESTS
AIA attack on industry's liability confusion. e p104 ... Jul 11
Detroit's AIA questions industry's right to share in model cities in view of costly wage settlements. CW p5 ... Aug 8
Industry told it heads for economic suicide; fails with regard to model cities,*. p49 ... Aug 22
Is building industry as it now exists on way out? e p112 . Aug 29
Builders warned: embrace systems or be replaced,*. p15 Oct 3
U.S. Chamber of Commerce calls natl conf on rising costs. CW p23 ... Oct 17
and e p88 ... Oct 24
URBS building system accepted: components are coming, diag,*. p117 and e p88 ... Oct 24
and RC p8 ... Nov 7
Urban crisis demands changes. p19 ... Oct 24
U.S. Chamber of Commerce conf: task force to find cure for labor problems,**. p31 ... Nov 28
Past decade's construction bolsters nation's industry. p149 Nov 28
Salute to the U.S. Chamber of Commerce on conf. e p164 Nov 28
Chmn for task force on industry's problems. CW p11 ... Dec 12
New task force attacks labor problems,**. p189 ... Dec 19

CONSULTANTS, see: ENGINEERING

CONTRACTORS; BIDS & CONTRACTS
Ford grant promotes minority builders,**. p27 ... Jul 11
Phila. general contractors propose accelerated training program for minority journeymen. p89 ... Jul 11
June bidding holds record pace. p91 ... Jul 11
CIJC: AGC resigns, new head named,*. p85 ... Jul 18
Two Viennese contractors' joint venture to develop city block complex,**. p28 ... Aug 15
Bankruptcy total falls sharply, table. p56 ... Aug 15
July bidding volume falls 12%. p61 ... Aug 15
New Washington, D.C. firm to promote minority participation in rebuilding the inner city. B p21 ... Aug 22
Industry may get Natl Fed of Construc Industry Assns (NFCIA) CW p25 ... Aug 29
AGC natl conf will air seasonal unemployment. CW p25 Aug 29
Contractors and owners confer on soaring costs. WO p27 Aug 29
Fed grant finances L.A. minority contractors group. p106 Aug 29
Contractors studying merger in Calif., also Wash. D.C. CW p7 ... Sep 5
L.S. Dillingham deals from strength in Hawaii,**. Cover, p26 and p28 ... Sep 5
U.S. contractors in Vietnam turn to public works jobs, map,**. p38 ... Sep 5
Bid competition disappearing due to flood of public works jobs. p69 ... Sep 5
August bidding off 10%. p70 ... Sep 5
Ohio Contractors Assn meets over problem of rising labor costs. p62 ... Sep 12
Formation of natl Council of Construction Employers for management unity. CW p75 ... Sep 19
Materials, wage hikes hit contractors hard. p100 ... Sep 19
Contractors pass on their higher costs. p103 ... Sep 19
U.S. contractors face extra problems overseas. p148 ... Sep 19
Reasons for more selective bidding and higher bid prices. RC p3 ... Sep 26
FPC proposes open bidding. p16 ... Sep 26
Ohio contractors call management unity a "must." p71 . Sep 26
Ban national agreements. RC p6 ... Oct 3
AGC looks to election for change, help,**. p83 ... Oct 10
On bids for Phila stadium. RC p16 ... Oct 17
U.S. Chamber of Commerce calls natl conf on rising costs. CW p23 ... Oct 17
and e p88 ... Oct 24
Hwy bidding volume tumbles. p101 ... Oct 17
AGC stirred up by proposed defense contracts warranty clause. p69 ... Oct 24
Open shop group urges labor changes,*. p81 ... Oct 24
NCA asks labor to shape up. p81 ... Oct 24
For auction bidding. RC p4 ... Oct 31
and RC p6 ... Dec 12
Ontario contractors move toward unity. p54 ... Oct 31
Contractors score Canada's policies. p136 ... Nov 7
25% fewer contractor failures, table. p136 ... Nov 7
J.C. Garvin challenges AGC on inflation. CW p11 ... Nov 14
The industry wrestles with seasonality,**. p71 ... Nov 14
Office of Educ to use AIA contract document A-201. p73 Nov 14
Dallas firm seeks growth from within. p73 ... Nov 14
Need for closer cooperation between owners and contractors. CW p9 ... Nov 21
Minority builders get national aid, launched by SBA,*. p16 Nov 21
First bids mark start of Weston, Ill., accelerator project. p20 ... Nov 21
Highway bids dip. B p25 ... Nov 21
October bid volume falls sharply. p61 ... Nov 21
U.S. Chamber of Commerce conf: task force to find cure for labor problems,**. p31 ... Nov 28
CCE: "Wrong approach to unity." p140 ... Nov 28
U.S. contractor insured on Israeli war loss. p149 ... Nov 28
A salute to the U.S. Chamber of Commerce on conf. e p164 ... Nov 28
AGC asks FHA for hwy compliance delay. CW p7 ... Dec 5
Construction climbs out of slump, chart. p11 ... Dec 5
U.S. contractors cautious on Franc crisis. p56 ... Dec 5
Pentagon issues top 100 list. p56 ... Dec 5
Chmn for task force on industry's problems. CW p11 ... Dec 12
Two Calif AGC chapters may consolidate. CW p11 ... Dec 12
NHPA: Blacks organize for contracts,*. p17 ... Dec 12
Government contract? Take an aspirin. p86 ... Dec 12
Contractors' selling prices rise faster. p70 ... Dec 19
New task force attacks labor problems,**. p189 ... Dec 19
Contractors in the Cabinet. e p186 ... Dec 19

CONVEYOR BELTS, see: EQUIPMENT

CORPS OF ENGINEERS, see: ENGINEERING

COURT CASES, see: LEGAL DEV.

CRITICAL PATH METHOD, see: MANAGEMENT

CULVERTS, see: PIPES; TUNNELS

D

DAMS see also: LOCKS; POWER; RIVERS
Mediation expands New River hydro project on Va.-N.C. border. p14 ... Jul 18
Feasibility study for third hydro dam on Cowlitz R. Wash. B p23 ... Sep 5
Data on new dams wanted for U.S. Committee on Large Dams B p25 ... Nov 21
Two Ill. dams undamaged by quake. B p22 ... Dec 12

• American

Amistad Dam, Rio Grande
Stores first water,*. p26 ... Oct 3

Big Bend Dam, South Dakota
Power plant controlled by remote supervisory control system from Oahe Dam. B p16 ... Dec 5

Boundary Dam, Pend Orailla River
Settlement of constructors' suit. CW p9 ... Jul 4

Broad Run Dam
Va. dam, unit prices. p124 ... Dec 19

John Day Dam, Columbia River
"Hydro giant will ultimately lend 2.7 million kw. p21 .. Oct 31

DeCordova Dam, Brazos River
Tex. dam is hollow puzzle of formwork,**. p48 ... Aug 1

Dworshak Dam
Concreters crank up for 200,000 cu yd per month, chart,**. p32 ... Dec 5

Grand Coulee, Columbia River
Bidders squabble over generators and turbines. p16 ... Jul 18
Coulee's power plant will really be grand, diag,**. p34 and e p100 ... Jul 18
Generator contract to Westinghouse. p33 ... Aug 29
Washington road, dam job won by 18%, unit prices. p62 Oct 10
Coulee power plant plan unveiled,**. p34 ... Oct 17
Coulee switchyard switch will net $5-m saving. p61 ... Dec 5

High Mountain Sheep Dam, Snake River
Dam draws a bid crowd. p16 ... Jul 25
Compromise agreement expected, p21 ... Oct 31
Becomes Appaloosa Dam. CW p11 ... Nov 14

Kinzua Dam, Allegheny River
Contrary to rumors, dam perfectly sound. CW p27 ... Aug 1
Dam's powerhouse moves water in three directions, diag,**. p26 ... Aug 8
and RC p4 ... Sep 12
and RC p38 ... Sep 19

Lake Eleanor Dam
Hetch Hechy enlargement calls for dam's replacement. p20 ... Dec 12

Robert Lee Dam, Colorado River
Morning glory pares dam's cost,**. p36 ... Sep 12

Oahe Dam, South Dakota
Remote supervisory control system for big Bend Dam power plant. B p16 ... Dec 6

Twin Springs Dam
Corps drops nuclear excavation plan to open Idaho quarry. p30 ... Oct 24

Union City Dam
Two bids on Pa. dam, unit prices. p99 ... Nov 28

Warren Avenue Dam, Charles River
Boston's plan for flood protection and boat congestion relief. B p34 ... Jul 11

• Foreign
Argentina and Uruguay agree on Salto Grande Dam for Uruguay R. CW p7 ... Jul 18

Argentina: Impregilo lands El Chocon Dam, map. p16 .. Oct 31
Australia's Outback set for Ord R. dam, diag, map,**. p52 Nov 28
Brazil reverses Capivari R. for power,diag,**. p28 ..... Oct 31
Canada: Manitoba's Kettle Rapids Dam,map,**. p34 ... Aug 15
Canada's W.A.C. Bennett Dam goes to work,**. p34 ... Nov 7
Canada plans second dam on Peace R. B p36 ..... Nov 7
Canada: Quebec tops out Manicouagan 5, map,**. p24 . Oct 10
France: Strasbourg uses seven sister dams' lessons on Rhine, map,diags,*. p38 ..... Dec 12
Ghana: Densu R. dam fails. p16 ..... Sep 12
Italy: Valont Dam engineer commits suicide before trial. CW p27 ..... Nov 28
Italy: Valont Dam suits pending. CW p7 ..... Dec 5
Italy: Valont disaster survivors offered quick settlement. p18 ..... Dec 12
Lesotho's Oxbow hydro dam. B p38 ..... Aug 29
Mozambique's Cabora Bassa Dam award, sort of, map. p23 ..... Jul 18
Nicaragua's Mistrook Dam collapse. B p22 ..... Sep 12
Pakistan: Tarbela Dam-seven years, 160-m cu yd to go, diags,**. p64 ..... Nov 7
S. Africa's Verwoerd Dam job moves despite floods,**. p26 ..... Nov 14
Southeast Asia: U.S. offers plan for big Mekong Dam, map p15 and e p76 ..... Sep 12
Southeast Asia: on Mekong Project. RCs p6 ..... Oct 10
Thailand to build new dam on Nan R. B p16 ..... Dec 5
Turkey: "Swiss cheese" rock slows Keban Dam. p19 ... Sep 26
Uruguay tries grouting cracks in Canelon Grande Dam,**. p48 ..... Oct 17
USSR breaks records: earth and arch dams,map,**. Cover and p32 ..... Oct 24
USSR starts Sayansk Dam on Yenisey R. B p25 ..... Nov 21
Venezuela's Guri Dam on line early,*. p44 ..... Nov 28
Zambia: second powerhouse for Kariba Dam. B p23 ... Sep 5

DEBRIS, GARBAGE: see: HEALTH see also: CITIES

DEFENSE, see: AIRPORTS; BUILDINGS; SPACE; CONSTRUCTION

• DEMOLITION, see also: EXPLOSIVES
Headache ball a headache, so dynamite does the job on Pittsburgh warehouse,**. p84 ..... Sep 19
NYC: warehouses under demolition fail,*. p18 ..... Dec 12

DESALTING, see: WATER SUPPLY, • Treatment

DETERGENTS, see: WATER POLLUTION

DIKES, see: DAMS; SOIL • Erosion, Shore Protection

DISASTERS, see: ACCIDENTS & DISASTERS

DISCRIMINATION, see: ETHICS • Civil Rights

DOCKS, see: PORTS AND HARBORS

DOMES, see: ROOFS

DOORS AND WINDOWS, see: BUILDING DESIGN & COMPONENTS

DRAFTING, see: SURVEYING see also: INSTRUMENTS & TOOLS

DRAINS, see: PIPES; SOIL; TUNNELS; WEATHER

DRAWING, see: SURVEYING see also: INSTRUMENTS & TOOLS

DREDGING, see: SOIL

DRILLING, see: EQUIPMENT

DROUGHT, see: IRRIGATION; WATER RESOURCES; WEATHER

DRYDOCKS, see: PORTS AND HARBORS

E

EARTHQUAKES, See; ACCIDENTS; BUILDING CODES; SOIL

ECONOMY, see also: CONSTRUCTION BUSINESS; TAXATION & TARIFFS; LABOR (Wages)
Manufacturers appropriated $5.76 billion in second quarter for expansion. B p22 ..... Sep 12
Capital spending estimate revised down by 2%. p22 .... Sep 12
All the cold water hasn't cooled the economy much. WO p77 ..... Sep 19
Interest rates ease slightly. p146 ..... Sep 19
Study group urges grant-in-aid reform. p86 ..... Sep 26
Appalachia road plan lacks cash. table,**. p27 ..... Oct 17
Interest rates sizzle as economy thrives,graph. p89 Oct 24
Industry boosts capital spending plans,table. p72 ..... Nov 14
Construction spending to rise. CW p27 ..... Nov 28
Past decade's construction bolsters nation's industry p149 ..... Nov 28
Investment curbs eased slightly. p150 ..... Nov 28
Can states check inflation? e p76 ..... Dec 5
Money costs squeeze owners. p104 ..... Dec 19
Nixon and his administration must map new economic routes. e p186 ..... Dec 19

EDUCATION & APPRENTICESHIP see also: BUILDINGS • Schools
Committee reviews Goals for Engg Educ report. CW p7 . Jul 18
Newark Coll of Engg offers new grad program. B p24 ... Jul 18
Engineering Education Goals reviewed, disputed. p42 .. Aug 1
OFCC approves new IUOE multiemployer affirmative action programs in Cleveland and Phila. p99 ..... Aug 1
Californians set up outreach program. p100 ..... Aug 1
Move toward Engineering Education Goals. e p76 ..... Aug 15
Princeton Univ finds microconcrete technique useful teaching tool,*. p21 ..... Aug 22
Drexel Inst of Tech. to divide college of engineering and science. B p21 ..... Aug 22
Colo State Univ offers pre-engineering by TV. B p38 ... Aug 29
Carpenters union opposed to accelerated apprentice training programs. CW p7 ..... Sep 5
Study of Berkeley and UCLA graduates: pay off on unified schooling. p21 ..... Sep 5
Course on handling explosives. B p23 ..... Sep 5
Courses on concrete at U of Md and U of Calif, Berkeley. B p86 ..... Sep 19
Graduate school dropouts in engineering. B p26 ..... Oct 3
Stanford first in number of advanced engineering degrees. B p26 ..... Oct 3
OSU revises engineering program. B p23 ..... Oct 31
Use unions' tax-free pension funds for apprenticeship programs. RC p8 ..... Nov 7
Goals for Engineering Education report discussed by Engineers' Council for Professional Devel. B p36 ..... Nov 7
Labor Dept's outreach program scores. p135 ..... Nov 7
ICED's Notre Dame U conf on education for environmental design. e p156 ..... Nov 7
p15 and e p76 ..... Nov 21
U of Pittsburgh new Graduate Center: generalists needed in public works. p24 ..... Nov 14
Office of Educ to use AIA contract document A-201. p73 Nov 14
Cal Tech may admit female undergraduates. p42 ..... Nov 28
Calif law calls for ratio of one apprentice to five journeymen on public works. p140 ..... Nov 28
Grants to Calif programs boost minority workers training. p55 ..... Dec 5
Buffalo, N.Y.: JUSTICE graduates 41 Negroes. p55 .... Dec 5

ELECTRICITY, see: POWER

ELECTRONICS, see: COMMUNICATIONS, ELECTRONICS

ENGINEERING
Correction of Top 500 design firm listing. RC p6 ..... Jul 4
The myopic engineer. RC p16 ..... Jul 11
Minority engineers. RC p4 ..... Jul 18
Committee reviews Goals for Engg Educ report. CW p7 . Jul 18
ASCET and ASCE: engineers, technicians cooperate. p13 Jul 18
Engineers' responsibility in structural failures. RC p4 ... Jul 25
Merge outside the profession? CEC has reservations,**. p13 and e p92 ..... Jul 25
What engineering societies are doing for engineering technicians. e p92 ..... Jul 25
Minority training program in one San Fran firm. RC p16 Aug 1
Reply to architect on "myopic engineer." RCs p16 .... Aug 1
p8 ..... Aug 29
p4 ..... Sep 5
Need for team effort by all design professionals. RC p6 . Oct 10
Engineering Education Goals reviewed, disputed. p42 .. Aug 1
Move toward Engineering Education Goals. e p76 ..... Aug 15
ENR plays up architect over engineer. RC p6 ..... Aug 22
In Mich. control of practicing corporation must be in hands of licensed professionals. RC p6 ..... Aug 22
Army Engineers' pressure against flood plain development. CW p9 ..... Aug 22
Three impending structural engineers' meetings should have been coordinated. e p68 ..... Aug 22
A big market in federal design work,table. p21 ..... Sep 5
Study of Berkeley and UCLA graduates: pay off on unified schooling. p21 ..... Sep 5
Natl Academy of Sciences calls for civil service engineers' fed job supervision. p9 ..... Sep 12
Sanitary engineering symposium at Cornell U., Ithaca. B p86 ..... Sep 19
British govt wants consulting engineers to compete for jobs abroad with priced proposals. CW p11 ..... Oct 3
Engineers ask foreign-aid increase. p18 ..... Oct 3
RC p4 ..... Dec 5
No need for proposed new national engineering society p116 ..... Oct 17
and RC p8 ..... Nov 7
and RC p6 ..... Dec 12
Goals for Engineering Education report discussed by Engineers' Council for Professional Devel. B p36 ..... Nov 7
Professional groups form Joint Committee on Employment Practices. p133 ..... Nov 7
Mergers: big design firms grow bigger. p73 ..... Nov 14
AEG and CESO: professional unionism begins to perk up. p54 ..... Dec 5
Engineer's role in systems building. RC p6 ..... Dec 12
Unions worry A-Es. p172 ..... Dec 19

ENGINEERING • Employment, Fees, Manpower
San Fran: BARTD, CEs in fee spat. p48 ..... Jul 4
VA cramped by 6% A-E fee limit. CW p9 ..... Jul 25
VA allowed to drop 6% A-E fee limit. p33 ..... Aug 1
Crucial manpower needs in public works. e p76 ..... Nov 21

• Societies

American Society of Civil Engineers
"To lag is to lose," ASCE told. p28 ..... Oct 10
Frank H. Newnam, Jr.-100th president,**. Cover and p31 ..... Oct 10

Consulting Engineers Council
One-day forum on mergers outside the profession,**. p 133 and e p92 ..... Jul 25

ENVIRONMENT, see: PLANNING & ENVIRONMENT see also: ARCHITECTURE; HEALTH; CITIES

EPOXIES, see: ADHESIVES & COATINGS

EQUIPMENT & MATERIALS see also: PRODUCTS (by names of manufacturers); ALUMINUM, CONCRETE, STEEL, etc.
Orders up, prices even. p34 ..... Aug 1
Materials costs rise 9%. CW p7 ..... Aug 15
Materials, wage hikes hit contractors hard. p100 ..... Sep 19
Materials prices soar 9% since last year. p138 ..... Sep 19
Machinery price rise slows. p145 ..... Sep 19
Galloping materials costs in 1969. CW p25 ..... Nov 7
Materials spark the cost rise. p89 ..... Dec 19
Equipment price rise. p102 ..... Dec 19

• Cranes, Hoisting, Lifting
Hertz rents out tower crane for S.C. nuclear reactor job,*. p31 ..... Jul 11
Ala. crane hits column, partly collapses precast frame. p11 Aug 8
50-ton derrick crane collapse in Chicago. B p16 ..... Aug 15
Crane pierces Pa. cooling tower,*. p33 ..... Oct 17
and RC p8 ..... Nov 7
Crane can walk and adjust to terrain, diag,*. p86 ..... Nov 7
San Diego: cranes team up for nighttime girder hoist,**. p26 ..... Dec 12

• Earthmoving and Excavating
Pneumagopher, tunneling device, is neat, quick and true, **. p22 ..... Sep 5
Vane shearer and bottom corer explore ocean bottom. p22 Sep 5
Terex becomes trade name for GM equipment. B p31 .. Oct 24
Japanese bulldozer grades under water,*. p22 ..... Nov 14
Swiss backhoe digs anywhere, any way,**. p22 ..... Nov 14
Mole makes monkey of mountain on Nevada tunnel job,*. p19 ..... Dec 12

• Jack Hammers
German hammer packs big wallop,*. p44 ..... Oct 3

• Vehicles
Bigger, heavier trucks for the Interstate system. WO p11 Jul 25
Some consequences of proposed new vehicle limits. e p278 Sep 19
Mammoth truck hauls 200 tons,*. p33 ..... Oct 17
Trailer pulled by pickup truck,*. p85 ..... Nov 7

ETHICS
CEC on mergers outside the profession: threats to ethical practice,**. p13 and e p92 ..... Jul 25

• Civil Rights
NAACP girds for model cities showdown,*. p54 ..... Jul 4
Ford grant promotes minority builders,**. p27 ..... Jul 11
EEOC: a frontal attack on exclusion. p84 ..... Jul 11
Phila. general contractors propose accelerated training program for minority journeymen. p89 ..... Jul 11
Minority engineers. RC p4 ..... Jul 18
Minority training program in one San Fran firm. RC p16 Aug 1
OFCC approves new IUOE multiemployer affirmative action programs in Cleveland and Phila. p99 ..... Aug 1
Californians set up outreach program. p100 ..... Aug 1
First open housing lawsuit, in Baton Rouge, La. B p14 .. Aug 8
Hwy bill's equal employment opportunity legislation. p55 Aug 8
New Washington, D.C. firm to promote minority participation in rebuilding the inner city. B p21 ..... Aug 22
Fed grant finances L.A. minority contractors group. p108 Aug 29
Model city labor accord for Boston,*. p12 ..... Sep 5
C.J. Haggerty urges action on minority groups,*. p253 .. Sep 19
New EEO guidelines issued for highways. p254 ..... Sep 19
Cincinnati: federal court cracks down on hiring halls in Dobbins case. p71 ..... Oct 3
Bridwell issues EEO order for hwys,*. p23 ..... Oct 10
Labor Dept's apprenticeship outreach program scores. p135 ..... Nov 7
Minority builders get national aid, launched by SBA,*. p18 Nov 21
Some states oppose equal employment opportunity regulations for hwys. WO p29 ..... Nov 28
Black Power struggle hits Detroit job. p139 ..... Nov 28
AGC asks FHA for hwy compliance delay. CW p7 ..... Dec 5
Grants to Calif programs boost minority workers training. p55 ..... Dec 5
Buffalo, N.Y.: JUSTICE graduates 41 Negroes. p55 .... Dec 5
House committee for enforcing equal opportunity. CW p11 Dec 12
Most road contractors ignore new job ruling. WO p13 .. Dec 12
NHPA: Blacks organize for contracts,*. p17 ..... Dec 12

EXCAVATING, see: SOIL see also: Equipment

EXPLOSIVES, see also: DEMOLITION
Civil debut for handy explosive, Astrolite. p22 ..... Jul 18
Chances good for law permitting commercial nuclear explosions. CW p9 ..... Jul 25
Study for blasting reefs from Strait of Malacca. B p21 .. Jul 25
Course on handling explosives. B p23 ..... Sep 5
Headache ball a headache, so dynamite does the job on Pittsburgh warehouse,**. p84 ..... Sep 19
Calif firm sets up advisory service on industrial applications of nuclear explosives. B p35 ..... Oct 17

EXPORTS, see ECONOMY; see also TAXES & TARIFFS

F

FAILURES, see: ACCIDENTS AND FAILURES

FAIRS, see: CITIES see also: BUILDINGS

FANNIE MAE, see: HOUSING

FEDERAL AVIATION AGENCY, see: AIRCRAFT; AIRPORTS

FIRE, see: ACCIDENTS & SAFETY; BUILDING CODES & INSPECTION

FISH, see: DAMS; RIVERS; WATER POLLUTION

FLOODS, see also: RIVERS; WATER RESOURCES; WEATHER
Army Engineers' pressure against flood plain development. CW p9 ..... Aug 22

Correction on engineers for Lake Pontchartrain flood control barriers. RC p3 ... Sep 26
Flood wipes out Italian railroad bridge,*. p19 ... Sep 26
World's biggest dredge on Corps' Fla. flood control project,*. p25 ... Oct 3
India tallies its flood losses. p31 ... Oct 24
Floods hit Italy as planning lags,*. p24 ... Nov 14
Corps endorses flood plan for N.J.'s Passaic R. p80 ... Dec 19

FLOORS, see: BUILDINGS DESIGN & COMPONENTS • Ceilings and Floors

FLUORIDATION, see: WATER SUPPLY • Treatment

FOUNDATIONS, see: BRIDGES; BUILDINGS; PILES; SOIL

FRAMING, see: BEAMS & COLUMNS; CONCRETE; STEEL; ROOFS

FROST, see: WEATHER

G

GARAGES, see: BUILDINGS

GARBAGE, see: HEALTH

GAS, see: PIPES; UTILITIES

GENERAL SERVICES ADMINISTRATION, see: BUILDINGS, • Federal

GIRDERS, see: BEAMS

GLASS
Mirrored glass covers bldg of Dallas jewelry firm,*. p13 ... Dec 5

GROUT, see: CONCRETE; SOIL

H

HEALTH, SANITATION see also: WATER POLLUTION; PLANNING & ENVIRONMENT
USSR orders air pollution halted. p14 ... Aug 22
Researchers sift garbage in solid waste study. p20 ... Aug 22
Sen. E.S. Muskie's nomination: democratic gain means pollution control loss,*. WO p9 and p12 ... Sep 5
New influenza virus heading for U.S. CW p6 ... Sep 26
Natl Gypsum Co. pipes polluted air into abandoned mines. B p25 ... Nov 21
San Fran garbage to be hauled to Lassen County desert. p36 ... Nov 28

HEATING, see: AIRCONDITIONING, HEATING

HIGHWAY DESIGN, MAINTENANCE & SAFETY see also: WEATHER
Chicago: buffer zone splits urban hwy,*. p33 ... Jul 11
Safety: more than design. e p68 ... Aug 22
Federal-state program aimed at hwy hazards. WO p9 ... Sep 5
Baltimore: team approach sets pattern for road design, map,**. Cover and p26 ... Sep 12
and e p276 ... Sep 19
Natl Hwy Users Conf now supports design considerations in construction. CW p75 ... Sep 19
Hwy safety programs implementation will be costly. CW p13 ... Oct 24
DOT establishes newest environmental directorate. WO p27 ... Nov 7
Highway-oriented planning criticized. p33 ... Nov 7
OSU develops fully automatic electronic controls for autos. B p36 ... Nov 7
New electronic systems for improved hwy safety. p20 ... Nov 14
Dallas interchanges center on single columns,**. p38 ... Nov 14
Corridor development aid planned,**. p19 ... Nov 21
and e p164 ... Nov 28
DOT approves corridor approach for Chicago Expressway. p20 ... Dec 12

HIGHWAYS
Equal employment in Senate hwy bill. p15 ... Jul 4
State hwy contracts totaled $4.2-billion in 1967. B p25 ... Jul 4
Conference fight due on most parts of hwy bill. WO p25 ... Jul 11
Federal-Aid Hwy Act of 1968: bad with the good. e p100 ... Jul 18
Bigger, heavier trucks for the Interstate system. WO p11 ... Jul 25
AASHO's president John O. Morton,**. Cover and p24 ... Jul 25
Innovation fills the hwy bill,**. p31 ... Aug 1
Anniversary finds DOT plugging cautiously,**. p12 ... Aug 8
BPR index: road prices rise. B p14 ... Aug 8
Hwy bill's equal employment opportunity legislation. p55 ... Aug 8
Fed-Aid Hwy Act of 1968 a good bill. e p76 ... Aug 8
Warm words accompany hwy contract freeze. WO p77 ... Sep 19
Hwy bid price rise slows in second quarter. p104 ... Sep 19
New EEO guidelines issued for highways. p254 ... Sep 19
Some consequences of proposed new vehicle limits. e p276 ... Sep 19
Highway Trust Fund can't elude budget cutback. WO p13 ... Oct 3
Bridwell issues EEO order for hwys,*. p23 ... Oct 10
Tollway officials against DOT's authority over tollroads. p23 ... Oct 10
Appalachia road plan lacks cash, table,**. p27 ... Oct 17
State road officials blast DOT over role in federal aid program. p31 ... Oct 17
Hwy bidding volume tumbles. p101 ... Oct 17
FHA's road hearing rules are fat in fire,*. p13 and e p88 ... Oct 31
DOT apportions record federal-aid funds for fiscal 1970. CW p25 ... Nov 7
Federal-aid programs face banner year. Cw p11 ... Nov 14
Interstate requests: now come the cuts. WO p11 ... Nov 21
Road hearing rules draw fire, praise. p21 ... Nov 21
Highway bids dip. B p25 ... Nov 21
FHA forecasts $10.5-billion hwy outlay next year. CW p27 ... Nov 28
Some states oppose equal employment opportunity regulations WO p29 ... Nov 28
Hearing slated on road hearing rules. p35 ... Nov 28
AGC asks FHA for hwy compliance delay. CW p7 ... Dec 5
Can states check inflation? e p76 ... Dec 5
Marathon hearing on hearings. CW p11 ... Dec 12
Most road contractors ignore new job ruling. WO p13 ... Dec 12
AASHO lashes new road rules,**. p15 and e p84 ... Dec 12
ARBA joins AASHO stand, warns of state pullouts. p17 ... Dec 12
Interstate extensions parceled to states. p61 ... Dec 19
Hwy bids show slight dip. p72 ... Dec 19

• American

Arkansas
Widening Little Rock streets, unit prices. p59 ... Jul 25

California
San Fran retaining wall doubles as flower box,*. p25 ... Jul 4
Space beneath Sacramento freeway for postal substation. B p34 ... Jul 11
Road and bridge job, unit prices. p163 ... Sep 19
Land sinks along Sacramento freeway job,**. p22 ... Oct 10
DOT forces San Fran's freeway reroute. p14 ... Oct 31
Record Calif road job bid for San Diego's Mission Valley complex,*. p19 ... Nov 14
San Diego: cranes team up for nighttime girder hoist,**. p26 ... Dec 12

Colorado
Traffic increase on toll-free Denver-Boulder Turnpike. B p23 ... Oct 31

Connecticut
Study of major corridor needs. B p60 ... Dec 19
Highway and bridges, unit prices. p116 ... Dec 19

D.C.
President orders delay on four controversial freeway projects. CW p25 ... Aug 29

Florida
Sunshine Skyway twin reflects its predecessor, map,**. p28 ... Jul 4

Georgia
Tight bids on highway. p40 ... Aug 22

Hawaii
Contractor wins road grading by 20%, unit prices. p123 ... Dec 19

Idaho
Excavation price takes county road, unit prices. p176 ... Sep 19

Illinois
Chicago: buffer zone splits urban hwy,*. p33 ... Jul 11
New shopping center requires street improvements, unit prices. p168 ... Sep 19
Chicago: rail transit lines lie in road median,*. p43 ... Nov 28
DOT approves corridor approach for Chicago Expressway. p20 ... Dec 12

Iowa
Street widening in Des Moines, unit prices. p121 ... Dec 19

Louisiana
Bituminous wins road, unit prices. p41 ... Sep 12
Bids spread for road, unit prices. p46 ... Oct 24

Maryland
Baltimore: team approach sets pattern for road design, map,**. Cover and p26 ... Sep 12

Massachusetts
Three-lane highway unit prices. p68. ... Aug 1
Contractor hauls mountain for embankment fill,**. p18 ... Aug 22

Michigan
Road and sewer job, unit prices. p54 ... Oct 3
Contractor speeds on Michigan raceway,**. p46 ... Oct 10
Plastic lane markings. B p23 ... Oct 31

Mississippi
Vote due on hwy bonds. B p22 ... Sep 12

Missouri
Road and bridge work, unit prices. p43 ... Aug 8

Montana
Road under estimate, unit prices. p71 ... Oct 17
Forest road 14% under estimate, unit prices. p126 ... Dec 19

Nebraska
State faces road cut. CW p7 ... Sep 5

New Jersey
Turnpike's complex road job hits a fast pace,**. p50 ... Aug 1

New York
NY State assessed for road noise. p32 ... Jul 11
I-84 near Brewster: bid competition is disappearing. p69 ... Sep 5
State applies for 1,242 Interstate miles. CW p25 ... Nov 7
Binghamton street job won by 4%, unit prices. p41 ... Dec 5

North Carolina
Interstate job, unit prices. p44 ... Aug 15

Ohio
Cleveland mayor for more urban rapid transit, fewer hwys. B p20 ... Sep 26
OSU develops fully automatic electronic controls for autos. B p36 ... Nov 7

Pennsylvania
Pa. studies tollroad expansion. p48 ... Aug 22

Puerto Rico
Two freeways to slash cross-island travel time. B p86 ... Sep 19

Rhode Island
GAO criticizes documentation of DPW's rights-of-way appraisals. B p22 ... Dec 12

Texas
Fast-Fix cement patch tested on Dallas streets. p24 ... Jul 4
Computers integrate freeway and arterial street traffic in Dallas. p21 ... Aug 15
Voters approve issuance of bonds by simple majority. CW p11 ... Nov 14
Dallas interchanges center on single columns,**. p38 ... Nov 14
correction p6 ... Dec 12
Slipform hinges on slab joint,**. p56 ... Nov 28

Virginia
Richmond expressway: bid competition is disappearing. p69 ... Sep 5
Dept. of Hwys' income again below estimate. B p22 ... Sep 12
Road job won by 0.5%, unit prices. p42 ... Sep 26

Washington
Road, dam job won by 18%, unit prices. p62 ... Oct 10

West Virginia
State Road Commission defends its professional capabilities. RC p4 ... Jul 18
Asphaltic road in W. Va., unit prices. p67 ... Jul 18
Turnpike takeover plan faces hurdles. p101 ... Oct 17

Wisconsin
Milwaukee regional planning for freeways, express buses, map,**. p26 ... Aug 22

Wyoming
Unit prices for highways in Wyoming during 1967, p69 ... Jul 11

• Foreign
Argentina receives roadbuilding loan. B p34 ... Jul 11
Australia: New Guinea's remote $1-m gravel road, map,**. p26 ... Sep 5
Belgium: old moat dried out for E-3, Antwerp's Kleine Ring Road, diag,**. p33 ... Nov 21
Brazil launches coastal highway. B p25 ... Nov 21
Canada: thin steel culverts carry earthmovers,*. p22 ... Oct 31
Costa Rica: workshop on highways in developing countries. B p16 ... Aug 15
Ghana plans two main hwys. B p86 ... Sep 19
Guinea: railroads, port to open mines, map. p41 ... Nov 28
Italy's tollroad system a success, plans to expand B p31 ... Oct 24
Libya: cost jumps before construction of Trans-Sahara hwy. B p36 ... Nov 7
Somalia receives IDA loan for road. B p34 ... Jul 11
Spanish tollroad concession. B p24 ... Jul 18
Vietnam: Seabees learn fast roadbuilding,** p43 ... Oct 3

HOMES, see: BUILDINGS; HOUSING

HOTELS, see: BUILDINGS

HOUSING, see also: BUILDINGS; CITIES
House will vote on bill after holiday recess. WO p11 ... Jul 4
Kaiser wins HUD's In-City contest for low-cost housing in model cities. p13 ... Jul 4
e p104 ... Jul 11
Computer cataloged housing. CW p23 ... Jul 11
Low-cost housing optimism. e p104 ... Jul 11
Big housing bill is nearly home,**. p11 ... Jul 18
Stacked mobile homes present substantial fire load. RC p6 ... Jul 25
Housing bill is out of conference. p14 ... Jul 25
House wants Pentagon to try turnkey contracting. p21 ... Jul 25
President orders $5,000 demonstration house. B p21 ... Jul 25
Low-cost prefab housing now in France - U.S. next?**. p34 ... Jul 25
Harvard U. study of public housing by private enterprise. p73 ... Jul 25
Labor takes model cities lead,**. p74 ... Jul 25
Cornell U. report: disposable housing might end shortages. p34 ... Aug 1
Concrete panel framing system forms low-cost housing units in Washington, D.C. p42 ... Aug 1
The model cities challenge to the industry. e p120 ... Aug 1
Housing bill sleeper aids savings banks, may cut mortgage funds. WO p7 ... Aug 8
First open housing lawsuit, in Baton Rouge, La. B p14 ... Aug 8
New housing bill: new hope for new towns. e p76 ... Aug 8
Nominees for partnership to tap private money for ghetto housing. CW p9 ... Aug 22
Big cities escape ban on high-rise public housing. WO p11 ... Aug 22
Which 20 cities for In City program? Nobody ready to say. WO p11 ... Aug 22
Rochester: townhouse modules go up in three hours,**. p17 ... Aug 22
Atlanta: mobile homes for those temporarily displaced by renewal. B p21 ... Aug 22
Chicago: with unions' acceptance, prefab housing has its day,*. p47 ... Aug 22
Interest rates on home mortgages rose in July. CW p25 ... Aug 29
Chicago: eight townhouses erected in 15 hours,**. p32 ... Aug 29
Detroit's Project Phoenix: legend of low-cost housing delays,**. p34 ... Aug 29
and e p84 ... Sep 5
RC p3 ... Oct 24
Toledo, Ohio housing for elderly former mental patients. B p23 ... Sep 5
New projects in Hong Kong. B p23 ... Sep 5
How many schemes for low-cost housing lost in red tape? e p84 ... Sep 5
President names incorporators of National Housing Partnership. WO p9 ... Sep 12
Auto dealers' Chrysler Realty to build residential development in Troy, Mich. B p22 ... Sep 12
HUD loans to colleges for student housing. B p22 ... Sep 12
Bronx, N.Y.'s Co-Op City: only the tenants will like it,**. p28 ... Sep 12

Rise in housing starts predicted. CW p75 ... Sep 19
National Housing Partnership: housing angels wait in wings, table. p79 ... Sep 19
Pentagon tries turnkey housing. p83 ... Sep 19
HUD planning grants tallied. B p86 ... Sep 19
Revised tax laws needed on buildings, property. WO p11 ... Sep 26
Fiscal '69 makes a thud at HUD. p20 ... Sep 26
Early tests to win bldg dept approval could have expedited Detroit's Project Phoenix. RC p6 ... Oct 3
Defense program spurs experimental building. WO p13 and e p92 ... Oct 3
In-City program leads the way to systems approach to building,*. p15 ... Oct 3
Housing studies out; Kaiser report delayed. WO p17 ... Oct 10
Private contractors speed Phila housing rehabilitation. p21 ... Oct 10
Calif: easily lifted room modules for low-cost housing,**. p26 ... Oct 10
Calif carpenters plan giant mortgage pool. p27 ... Oct 10
View of systems building in Europe. RC p16 ... Oct 17
Terms for reinsuring riot areas for rehabilitation. WO p25 ... Oct 17
HUD's T.F. Rogers: instant city expert,**. Cover and p36 ... Oct 17
Where HUD's research money goes - table. p42 ... Oct 17
Instant housing goes up in Rochester,*. p96 ... Oct 17
National Gypsum Co. Chmn predicts 1969 housing surge. p96 ... Oct 17
HUD warns black separatists in model cities,*. p19 ... Oct 24
Construction industry: urban crisis demands changes. p19 ... Oct 24
Lack of credit perils housing,**. p53 ... Oct 31
Construction slowed by cut budget. WO p27 ... Nov 7
George Air Force Base, Calif: mobile factory to produce housing on site,*. p31 ... Nov 7
Treasury man decries capital gains bailout. p32 ... Nov 7
St. Louis S&Ls plan housing for city slums. p141 ... Nov 7
Multifamily mortgages to bring higher prices. WO p11 ... Nov 21
Fort Lincoln new town housing experiments in Washington, D.C.,**. p24 ... Nov 21
Construction process small part of total housing costs. e p76 ... Nov 21
P.H. Douglas defends public housing,*. p33 ... Nov 28
Mass student housing rises at U of Penn,*. p43 ... Nov 28
Fannie Mae moves into private sector. p150 ... Nov 28
Kaiser housing report awaits Nixon takeover. WO p9 ... Dec 5
More govt timber asked for homebuilding. WO p9 ... Dec 5
Brookings Inst. publication: U.S. housing goal called beyond reach. p12 ... Dec 5
Douglas, Kaiser studies to be released Sunday. WO p13 ... Dec 12
HUD changes policies for renewal, housing. WO p13 ... Dec 12
Albany housing costly, NY State agency halts financing. p19 ... Dec 12
NYC: Columbia U's building plans include neighbors,*. p21 ... Dec 12
Housing builds Boise Cascade Corp.,**. Cover and p28 ... Dec 12
New panel will advise U.S. on housing needs. WO p53 ... Dec 19
HUD's new housing technology program starts. p57 ... Dec 19
Douglas Commission sets another housing goal,*. p59 ... Dec 19

I

ICE, see: SOIL; WEATHER

INCINERATORS, see: BUILDINGS; HEALTH

INDUSTRIAL PARKS, PLANTS, SITES, see: BUILDINGS; CITIES

INDUSTRIAL WASTES, see: WATER POLLUTION

INFLATION, see: ECONOMY

INSPECTION, see: BUILDING CODES

INSTRUMENTS AND TOOLS see also: RESEARCH

Vibrator measures pavement strength,*. p41 ... Nov 28

INSULATION: see ADHESIVES, COATINGS, INSULATION, PAINT

INSURANCE

Compensation insurance rates show mixed trend. p135 ... Sep 19
Terms for reinsuring riot areas for rehabilitation. WO p25 ... Oct 17
AGC stirred up by proposed defense contracts warranty clause. p69 ... Oct 24
U.S. Contractor insured on Israeli War loss. p149 ... Nov 28

INTERNATIONAL

Argentina and Uruguay agree on dam and bridge for Uruguay R. CW p7 ... Jul 18
Study for blasting reefs from Strait of Malacca. B p21 ... Jul 25
Smallest foreign-aid bill in history expected. WO p29 ... Aug 1
Commerce to issue foreign investment policy. WO p29 ... Aug 1
and RC p38 ... Sep 19
Foreign outlays will rise 10%, tables. p61 ... Aug 8
Budget cuts squeezing biologists out of studies of Proposed new interoceanic canal. WO p9 ... Aug 15
Cuts may reshape foreign-aid program. p61 and e p76 ... Aug 15
Universe Ireland the latest of superships spurring port projects,*. p20 ... Aug 22
World Power Conf becomes World Energy Conf, in Moscow, diags. p36 ... Aug 29
Argentina and Uruguay in electric power sharing project. B p38 ... Aug 29
U.S. offers plan for big Mekong Dam, map. p15 and e p76 ... Sep 12
U.S. contractors face extra problems overseas. p148 ... Sep 19
World survey of wages, prices, costs. p152 ... Sep 19
AID dusts off proposals to promote private help to developing countries. WO p11 ... Sep 26
Senate ups foreign aid; compromise anticipated. WO p13 ... Oct 3
Engineers ask foreign-aid increase. p16 ... Oct 3
and RC p4 ... Dec 5
Southeast Asia: on Mekong Project. RCs p6 ... Oct 10
World Bank's foreign aid role reaffirmed by McNamara. e p100 ... Oct 10
View of systems building in Europe. RC p16 ... Oct 17
Foreign direct investment curbs eased slightly. p150 ... Nov 28
Danube R. countries meet to plan pollution control. CW p7 ... Dec 5
Foreign aid faces major surgery. p170 ... Dec 19

• By Country

Algeria

To supply gas for Boston. B p16 ... Dec 5

Argentina

Receives roadbuilding loan. B p34 ... Jul 11
Search for concessionaire to operate the two Morandi toll bridges. B p24 ... Jul 18
Highway tunnel avoids shifty Parana River, map,**. p32 ... Jul 18
El Chocon hydro bid call. B p21 ... Jul 25
Contract for hwy bridge at Corrientes. B p21 ... Jul 25
Silt may close Buenos Aires port. p15 ... Sep 5
Many Germans among bidders on El Chocon hydro project. CW p7 ... Sep 12
El Chocon hydro award due. p21 ... Oct 3
Impregilo lands El Chocon Dam, map. p16 ... Oct 31
Canal in river aids boat traffic, map,*. p76 ... Nov 7
Buenos Aires apt bldg collapse kills three. CW p7 ... Dec 5

Australia

Melbourne's Victorian Arts Center is tops, diag,**. p30 ... Jul 4
Sydney Opera cost rises again,*. p11 ... Aug 8
Sydney Opera House: sketches vs architecture. e p76 ... Aug 15
NSW govt RR to lay lines competing with private pipes. B p38 ... Aug 29
New Guinea's remote $1-m gravel road, map,**. p26 ... Sep 5
Sydney Opera lowers curtain on cost increases,*. p17 ... Sep 26
Outback set for Ord River dam, diag, map,**. p52 ... Nov 28

Austria

Two Viennese contractors establish joint venture to develop city block complex,**. p28 ... Aug 15
Vienna's UN City competition. B p38 ... Aug 29
Vierendeel trusses aid Vienna hospital support,**. p40 ... Aug 29
Vienna Trade Fair's mushroom pavilion,**. p22 ... Oct 3

Belgium

Old moat dried out for E-3, Antwerp's Kleine Ring Road, diag,**. p33 ... Nov 21
Alteration altercation delays E-3 viaduct portion of Kleine Ring Road,**. p34 ... Nov 21

Brazil

Tide-riding rig rings itself with piles, diags,*. p41 ... Jul 11
Oil dock serves inland refinery,*. p15 ... Jul 25
Rio de Janeiro's Copacabana Beach widened. B p21 ... Jul 25
Brazil reverses Capivari R. for power, diag,**. p28 ... Oct 31
World Bank loan for roads and hydro projects. CW p25 ... Nov 7
Launches coastal highway. B p25 ... Nov 21

Canada

Cliff climber protects Labrador's Twin Falls power plant,**. p28 ... Jul 25
Contract to excavate Churchill Falls underground Powerhouse. CW p27 ... Aug 1
Plans for Montreal's second airport and Toronto's expansion. CW p5 ... Aug 8
Churchill Falls hydro: $23-m for odd jobs. B p16 ... Aug 15
Canada's tallest bldg, in Toronto, to top a plaza,*. p21 ... Aug 15
Manitoba Hydro's Nelson R. Project, map,**. p34 ... Aug 15
Toronto: shops will hang from bridge,*. p15 ... Aug 22
Labor-management effort may avert Toronto strike. p62 ... Sep 5
Govt. cancels Winter Works Incentive Program. CW p7 ... Sep 12
Vancouver, B.C. installs heating system under downtown sidewalks. B p22 ... Sep 12
Canadians see need for regional bargaining. p62 ... Sep 12
Canada halts winter building incentives. p17 ... Sep 26
Work on Northumberland Strait Crossing suspended due to costs. CW p15 ... Oct 10
Quebec tops out Manicouagan 5, map,**. p24 ... Oct 10
Additional partner in Churchill Falls contract. RC p16 ... Oct 17
Neither time nor tide tethers St. Lawrence wharf job,**. p42 ... Oct 24
May study Lake Ontario for airport. CW p7 ... Oct 31
Bond issues for Churchill Falls (Labrador) Corp., Ltd. CW p7 ... Oct 31
Thin steel culverts carry earthmovers,*. p22 ... Oct 31
Ontario contractors move toward unity. p54 ... Oct 31
SEF and RAS: systems building invades Canada,**. p29 ... Nov 7
B.C.'s Peace River goes to work,**. p34 ... Nov 7
B.C. plans for second dam on Peace River. B p36 ... Nov 7
Nova Scotia plastic pipeline requires new methods,**. p81 ... Nov 7
Contractors score Canada's policies. p136 ... Nov 7
Churchill Falls hydro project builders study two more developments. CW p11 ... Nov 14
Churchill Falls raise climber surfaces,**. p15 ... Dec 5
B.C.'s utility lines going underground. B p16 ... Dec 5
Power plants for Douglas Point and Bath. CW p11 ... Dec 12
Fine for violating Ontario Safety Act. B p80 ... Dec 19
Proposal for Welland Canal superlocks postponed. B p60. ... Dec 19

Chile

Water and power running out in severe drought. p15 ... Sep 5

China

Great Yangtze R. Bridge crackling. p24 ... Jul 4

Costa Rica

Volcano rips remote villages and roads. p12 ... Aug 8
San Jose workshop on highways in developing countries. B p16 ... Aug 15

Cuba

Contract renewed for seawater conversion and electric power plants at Guantanamo Bay. B p23 ... Sep 5

Czechoslovakia

Rail transit system for Prague. CW p23 ... Oct 17
Prague viaduct serves as road, rail bridge, diag,**. Cover and p22 ... Dec 5

Ecuador

Guayas R. hydro survey. B p25 ... Jul 4

Egypt

Abu Simbel Temple is back together,**. p26 ... Oct 24
First subway in Arab world for Cairo. CW p7 ... Dec 5
To have Suez-Alexandria oil pipeline. B p16 ... Dec 5

Finland

Saimaa Canal completed. B p21 ... Aug 22
May get three A-plants. CW p25 ... Nov 7

France

French monorail rides on air,*. p16 ... Jul 18
Low-cost prefab housing now in France - U.S. next?**. p34 ... Jul 25
Parachute roofs settle on French markets,*. p41 ... Aug 1
Go-ahead for Frejus Tunnel through French-Italian Alps. CW p27 ... Nov 28
U.S. contractors cautious on Franc crisis. p56 ... Dec 5
Strasbourg uses seven sister dams' lessons on Rhine, map, diag,*. p38 ... Dec 12

Germany

Mole adapts to varying soil in Hamburg,*. p43 ... Aug 1
Europe Canal to link three rivers, map,**. p48 ... Aug 29
Munich builders of '72 Olympics take a running start,*. p80 ... Sep 19
Wuppertal monorail damaged by truck,*. p86 ... Sep 19
Frankfurt subway rolls. CW p15 ... Oct 10
Reactor from USSR miffs East Germans. B p25 ... Nov 21
Cologne-Bonn airport turned to "showpiece." p68 ... Nov 28
Munich: subway construction site explosion. B p80 ... Dec 19

Ghana

Densu R. Dam fails. p16 ... Sep 12
Plans for two main hwys. B p86 ... Sep 19

Great Britain

Questions re delays in power stations construction. CW p9 ... Jul 25
Pipelayer plows sewer in quickly,**. p44 ... Aug 1
Hovercraft ferry jets across English Channel. B p14 ... Aug 8
London: Boeing hangar's space frame roof will span 453 ft,**. p13 ... Aug 15
British fear explosions, cut off gas in prefab bldgs. p17 ... Aug 22
Welsh bridge another variation of welded steel box-girder design,*. p13 ... Sep 5
N. Scotland's first nuclear plant and pumped-storage on Loch Ness. B p23 ... Sep 5
British labor relations are out of step. p64 ... Sep 5
English Channel tunnel delayed to 1971. CW p11 ... Oct 3
Govt wants consulting engineers to compete for jobs abroad with priced proposals. CW p11 ... Oct 3
England favors component building over systems. p32 ... Oct 17
and RC p8 ... Nov 7
England's longest runway at London's Heathrow Airport. B p23 ... Oct 31
England's medieval bridge saved with steel,**. p44 ... Nov 7
London apt. collapse report cites bldg code flaws. p23 ... Nov 21
A showdown on wages. p58 ... Nov 21
London's Big Ben Tower is tilting. CW p27 ... Nov 28

Guinea

Railroads, port to open mines in Guinea, map. p41 ... Nov 28

Hong Kong

New housing projects in Kwai Chung and Kwai Hing. B p23 ... Sep 5
Far East's largest hangar at Kai Tak Airport. B p35 ... Oct 17

India

India drills for water to cope with monsoons,**. p30 ... Aug 22
Boy killed to win gods' favor on irrigation project. B p20 ... Sep 26
New bridge to supplement Calcutta's Howrah Bridge,**. p20 ... Oct 3
India tallies its flood losses. p31 ... Oct 24

Indonesia

World Bank loan for irrigation. B p20 ... Sep 26
World Bank award for transp system. B p35 ... Oct 17

Iran

Iran plans two large airports. p15 ... Sep 5
Earthquakes kill 20,000, map,*. p16 ... Sep 12

Israel

U.S. contractor insured on Israeli War loss. p149 ... Nov 28

Italy

Florence-Rome express rail line. B p25 ... Jul 4
Milan streets fall into canals,**. p32 ... Jul 4
Flood wipes out railroad bridge,*. p19 ... Sep 26
Tollroad system a success, plans to expand. B p31 ... Oct 24
Gale's damage delays plans for bridge linking Sicily and mainland. CW p7 ... Oct 31
Floods hit Italy as planning lags,*. p24 ... Nov 14
Valont Dam engineer commits suicide before trial. CW p27 ... Nov 28
Valont Dam suits pending. CW p7 ... Dec 5
Valont Dam disaster survivors offered quick settlement. p18 ... Dec 12

Japan

Starts port facilities for A-powered ships. B p25 ... Jul 4
Japan's first suspended monorail line. B p34 ... Jul 11
High-speed rail line to connect Hokkaido Island with Kyushu Island. CW p7 ... Jul 18
Real earthquakes used to study antiseismic designs of nuclear power plant components. B p21 ... Jul 25
Huge space frame dominates Osaka's Expo '70,**. p22 ... Jul 25

To integrate urban planning agencies into new National Development Ministry. B p14 ... Aug 8
Japanese build underwater house. B p14 ... Aug 8
Landslide sweeps two tour buses into river. CW p9 ... Aug 22
Start set for new Tokyo airport,*. p31 ... Aug 29
Plans for high-speed, $14-billion rail network, map. p18 . Oct 3
Ship grades Nagoya Harbor bottom,*. p21 ... Oct 3
Shields, special liner cut Tokyo subway cost,**. p40 ... Oct 3
Osaka office bldg bordering excavation tilts backwards,*. p30 ... Oct 17
U.S. contract let for Expo '70 pavilion,*. p21 ... Nov 14
Japanese bulldozer grades under water,*. p22 ... Nov 14
RR plans pipelines to carry oil and fuel products. B p22 Dec 12

Kuwait
Yugoslav firm to improve Suwayq Harbor. B p16 ... Dec 5

Lesotho
Oxbow hydro dam in Maluti Mts. B p38 ... Aug 29

Libya
Cost jumps before construction of Trans-Sahara hwy. B p36 ... Nov 7

Luxembourg
Loan for water system. B p21 ... Jul 25

Malaysia
Caterpillar land clearing project. p20 ... Aug 22
World Bank loans for water supply and telephone installations. B p20 ... Sep 26
Bldg collapse may cause law change,*. p33 ... Nov 7

Mexico
Mexico City quake does little damage,*. p12 ... Aug 8
Water-filled oil drums stabilize cable-suspended roof during concrete pouring,**. p14 ... Aug 15
Amistad Dam stores first water,*. p26 ... Oct 3

Mozambique
Cabora Bassa Dam award, sort of, map. p23 ... Jul 18

Muscat and Oman
Water distribution system. B p23 ... Sep 5

Nepal
Plans for access to shrine at Buddha's birthplace B p24 . Jul 18

Netherlands
Amsterdam ready to start 55-mile transit system. p16 .. Jul 18
Plans for World Trade Center in Rotterdam. B p14 ... Aug 8
World Trade Center planned for Rotterdam*. p23 ... Nov 21

Nicaragua
Mistrook Dam collapse. B p22 ... Sep 12

Nigeria
Clay bested, Lagos bridge opening set,**. p71 ... Nov 7

Pakistan
Tarbela Dam-seven years, 160-m cu yd to go, diags,**. p64 Nov 7

Panama
Panama's new hydro on Bayano R. B p38 ... Aug 29
Study group favoring Panama sea-level canal. p14 ... Sep 12
Coup slows interocean canal. p20 ... Oct 24

Peru
Ousted leader fears work halt,*. p35 ... Oct 17

Philippines
Manila quake collapses apt bldg,*. p12 ... Aug 8
Investigation of Manila apt bldg quake collapse. CW p7 . Aug 15
Manila 400-death apt bldg collapse laid to poor design. p16 Aug 22
Manila apt bldg collapse: multiple homicide laid to architect, engineers. p38 and e p112 ... Aug 29

Seychelles Islands
First airport. B p16 ... Dec 5

Somalia
Receives IDA loan for road. B p34 ... Jul 11

South Africa
Concrete arch cantilevers over rugged gorge,**. p14 ... Aug 8
Road, rails cross Orange R. on arches,**. p22 ... Aug 15
Verwoerd Dam job moves despite floods,**. p26 ... Nov 14
Office bldg's suspended floor structure sets record at 30 stories, diag,**. p34 ... Nov 14

Spain
Rail line connects Burgos with Madrid. B p24 ... Jul 18
Spanish tollroad concession. B p24 ... Jul 18

Sudan
Bridge to link two suburbs of Khartoum. B p34 ... Jul 11

Sweden
Hits lake pollution with three studies. p46 ... Jul 11
Naval yard built inside rock island,**. p33 ... Jul 25
Architects ask charwomen how to make job easier. B p21 Aug 22
Stockholm has govt pay for ships' oil slick cleanup. B p38 Aug 29
Plans for underground pumped-storage. CW p75 ... Sep 19
Aluminum sulfate may save dying lakes. p23 ... Oct 3

Switzerland
Geneva Airport set for giant jets,*. p24 ... Jul 4
Swiss backhoe digs anywhere, any way,**. p22 ... Nov 14
Swiss combine apparent low bidder for St. Gotthard Pass tunnel. CW p9 ... Nov 21

Taiwan
Boom spurs $60-m port job, diag,*. p56 ... Nov 7
Taiwan's first nuclear plant. B p25 ... Nov 21

Thailand
Bangkok airport expands, new one years off. p85 ... Sep 19
To build new dam on Nan R. for added power. B p16 .. Dec 5

Turkey
"Swiss cheese" rock slows Keban Dam. p19 ... Sep 26
World Bank loan for transmission line from Keban Dam CW p25 ... Nov 7
Design for Ayvansaray Bridge, part of Bosporus Bridge project. CW p9 ... Nov 21
Japanese to provide multipurpose hydro project. B p16 . Dec 5

Uruguay
Tries grouting cracks in Canelon Grande Dam,**. p48 .. Oct 17

USSR
Moscow is replanning to depopulate and humanize,*. p30 Jul 11
Natural gas from Siberia in 8-ft-dia steel pipelines. B p21 ... Jul 25
Ministry of Foreign Trade Europe's tallest bldg. CW p7 . Aug 15
Orders air, water, noise pollution halted. p14 ... Aug 22
U.S.-USSR chimney height competition,*. p92 ... Sep 19
Polluters of Caspian Sea ridiculed into action. p30 ... Oct 17
Breaks records: earth and arch dams, map,**. Cover and p32 ... Oct 24
Start of Sayansk Dam on Yenisey R. B p25 ... Nov 21
1969 economic plan affects construction. CW p51 ... Dec 19

Venezuela
Guri Dam on line early,*. p44 ... Nov 28

Vietnam
Army's Phu Cuong Bridge over Saigon R. B p24 ... Jul 18
Calls bids for Mekong R. hwy bridge. CW p9 ... Aug 22
U.S. contractors turn to public works jobs, map,**. p38 Sep 5
Seabees learn fast roadbuilding,*. p43 ... Oct 3
Bombing halt affects construction little. WO p27 ... Nov 7
Helicopter base will use Calif plant to keep down sand. B p36 ... Nov 7

Yugoslavia
Canadian loan to expand irrigation project. B p23 ... Sep 5
Plans for bridge across Danube R. B p60 ... Dec 19

Zambia
Second powerhouse for Karibe Dam. B p23 ... Sep 5

IRRIGATION
India drills for water to cope with monsoons,**. p30 ... Aug 22
Canadian loan to Yugoslavia to expand irrigation project. B p23 ... Sep 5
Irrigation and hydro costs still moving higher. p107 ... Sep 19
World Bank loan to Indonesia. B p20 ... Sep 26
Indian boy killed to win gods' favor on project. B p20 .. Sep 26
Australia's Outback set for Ord R. dam, diag, map,**. p52 Nov 28
Irrigation and hydro costs, indexes-BuRec. p76 ... Dec 19

J

JOINTS, see: BEAMS, FRAMES

L

LABOR
Three bills stirring: joint industry promotion funds, safety standards, and seasonality. WO p9 ... Jul 18
Unions winning blue chip raises. p80 and e p100 ... Jul 18
and RCs p6 ... Aug 22
CIJC: AGC resigns, new head named,*. p85 ... Jul 18
Labor takes model cities lead,**. p74 ... Jul 25
Congress may demand seasonality study. p76 ... Jul 25
AFL-CIO's platform proposals to Republican and Democratic parties. CW p27 ... Aug 1
Labor legislation appears roadblocked in 90th Congress. WO p29 ... Aug 1
The model cities challenge to the industry. e p120 ... Aug 1
Labor shortages widespread-no easy solution, table. p62 Aug 15
Industry told it heads for economic suicide; fails with regard to model cities,*. p49 ... Aug 22
and RC p3 ... Sep 26
AGC natl conf will air seasonal unemployment. CW p25 Aug 29
Contractors and owners confer on soaring costs. WO p27 Aug 29
Cleveland: five-state group obtains management unity. p100 ... Aug 29
Model city labor accord for Boston,*. p12 ... Sep 5
British labor relations are out of step. p64 ... Sep 5
Canadian govt. cancels Winter Works Incentive Program. CW p7 ... Sep 12
Model cities headed for trouble. p61 ... Sep 12
Formation of natl Council of Construction Employers for management unity. CW p75 ... Sep 19
C.J. Haggerty urges action on minority groups, wages, seasonality,*. p253 ... Sep 19
Canada halts winter building incentives. p17 ... Sep 26
Ohio contractors call management unity a "must." p71 . Sep 26
Ban national agreements. RC p6 ... Oct 3
New AFL-CIO attack on urban problems,*. p72 ... Oct 3
Cincinnati stadium slowed by carpenter shortage. CW p15 Oct 10
House passes bill covering seasonality. WO p17 ... Oct 10
AGC looks to election for change, help,**. p83 ... Oct 10
U.S. Chamber of Commerce calls natl conf on rising constr. CW p23 ... Oct 17
and e p88 ... Oct 24
Concern mounts as manpower shortages grow, table. p94 Oct 17
NCA asks labor to shape up. p81 ... Oct 24
Seasonality begins to get a big play,*. p54 ... Oct 31
Canadians in Ontario move toward unity. p54 ... Oct 31
Model cities: safety's only one problem,**. p133 ... Nov 7
J.C. Garvin challenges AGC on inflation. CW p11 ... Nov 14
The industry wrestles with seasonality,**. p71 ... Nov 14
LBJ urges curb on seasonality. p14 ... Nov 21
U.S. Chamber of Commerce conf: task force to find cure for labor problems,**. p31 ... Nov 28
Calif law called "featherbedding." p140 ... Nov 28
CCE: "wrong approach to unity." p140 ... Nov 28
A salute to the U.S. Chamber of Commerce on conf. e p184 ... Nov 28
Chmn for task force on industry's problems. CW p11 ... Dec 12
Shortages increase despite winter delays, table. p64 ... Dec 12
New task force attacks labor problems,**. p189 ... Dec 19

• Boycotts, Pickets, Strikes
NYC painters demand 51% wage increase. p56 ... Aug 8
Unions to picket Dallas-Fort Worth Airport over wages. CW p7 ... Sep 5
Labor-management effort may avert Toronto strike. p62 Sep 5
NLRB: asbestos workers' strike in Ohio could have been legal. CW p25 ... Nov 7

• Hiring; Wages; Contracts & Bargaining
On reduction of NAB union initiation fee in Atlanta. RC p6 ... Jul 4
Equal employment in Senate hwy bill. p15 ... Jul 4
NAACP girds for model cities showdown,*. p54 ... Jul 4
New settlements test Detroit management unity. p54 ... Jul 4
EEOC: a frontal attack on exclusion. p84 ... Jul 11
Unions winning blue chip raises. p80 and e p100 ... Jul 18
and RCs p6 ... Aug 22
Cleveland: ten contractor associations cut costly overtime. CW p9 ... Jul 25
Cabinet committee draws bead on construction wages. WO p11 ... Jul 25
Minority training program in one San Fran firm. RC p16 Aug 1
OFCC approves new IUOE multiemployer affirmative action progress in Cleveland and Phila. p99 ... Aug 1
Pay boosts average 38.3 cents. p100 ... Aug 1
Californians set up outreach program. p100 ... Aug 1
Hwy bill's equal employment opportunity legislation. p55 Aug 8
Union workers average $5.62, table. p49 ... Aug 22
Rising wages make for rapid increase of construction costs, table. p100 ... Aug 29
New status symbol might help recruitment for building trades. p62 ... Sep 5
Materials, wage hikes hit contractors hard. p100 ... Sep 19
1968 wage hikes are costliest yet. p113 ... Sep 19
ENR wage indexes show where inflation is worst. p120 . Sep 19
New EEO guidelines issued for highways. p254 ... Sep 19
Cincinnati: federal court cracks down on hiring halls in Dobbins civil rights case. p71 ... Oct 3
Companies financing projects can help protect contractors' bargaining position. CW p13 ... Oct 24
1968 wage increases to date set record high. CW p7 ... Oct 31
Professional groups form Joint Committee on Employment Practices. p133 ... Nov 7
Labor Dept's apprenticeship outreach program scores p135 Nov 7
Pay increases hit record high. p135 ... Nov 7
Union wage averages $5.74 an hour, table. p58 ... Nov 21
Britain: a showdown on wages. p58 ... Nov 21
Calif law calls for ratio of one apprentice to five journeymen on public works. p140 ... Nov 28
House committee for enforcing equal opportunity. CW p11 Dec 12
Wage hikes rock costs. p106 ... Dec 19

• NLRB; Jurisdictional Disputes
Cincinnati and Columbus, Ohio: prefabrication clauses ruled illegal. p62 ... Sep 5
General Electric Co. case ruling facilitates regional bargaining. CW p7 ... Oct 31
Asbestos workers' strike in Ohio could have been legal. CW p25 ... Nov 7

• Regional Bargaining
Six northeastern states' contractors to meet in Cleveland, plan management unity. CW p7 ... Aug 15
Industry may get Natl Fed of Construc Industry Assns (NFCIA.) CW p25 ... Aug 29
Cleveland: five-state group obtains management unity. p100 ... Aug 29
Ohio Contractors Assn meets over problem of rising labor costs. p62 ... Sep 12
Canadians see need for regional bargaining. p62 ... Sep 12
Ohio contractors call management unity a "must." p71 . Sep 26
CPLIA goes on record for contractor unity and regional bargaining. p85 ... Oct 10
NLRB's General Electric Co. ruling facilitates regional bargaining. CW p7 ... Oct 31
Canadians in Ontario move toward unity. p54 ... Oct 31
Coordinator named for Pittsburgh's Regional Congress of Construc Employers. p58 ... Nov 21

• Unions
AFL-CIO's platform proposals to Republican and Democratic parties. CW p27 ... Aug 1
Buffalo, N.Y. union carpenters oppose prefab classrooms. p99 ... Aug 1
Chicago: with unions' acceptance, prefab housing has its day,*. p47 ... Aug 22
Carpenters union opposed to accelerated apprentice training programs. CW p7 ... Sep 5
Calif groups form first estimators' union. p255 ... Sep 19
AFL-CIO forms new Dept. of Urban Affairs and HRDI,*. p72 ... Oct 3
Calif carpenters plan giant mortgage pool. p27 ... Oct 10
Calif union estimators file charges. p85 ... Oct 10
Open shop group urges labor changes,*. p81 ... Oct 24
Use tax-free pension funds for apprenticeship programs. RC p8 ... Nov 7
Professional groups join on union problems. p133 ... Nov 7
Black Power struggle hits Detroit job. p139 ... Nov 28
AEG and CESO: professional unionism begins to perk up. p54 ... Dec 5
Laborers name president, secretary-treasurer. p54 ... Dec 5
Unions worry A-Es. p172 ... Dec 19

LAKES
Great Lakes' life is threatened; systems approach needed. p23 ... Jul 4

Sweden hits lake pollution with three studies,*.p46 .... Jul 11
Opening of St. Lawrence Seaway let predatory sea lampreys into Great Lakes. WO p9 ... Aug 15
and RC p4 ... Sep 12
Sweden: aluminum sulfate may save dying lakes. p23 .... Oct 3
FWPCA pollution control report on Lake Erie. p28 .... Oct 10
and e p116 ... Oct 17
Cost of cleaning up Lake Ontario pollution about $300-m. p16 ... Dec 5
Corps, company solve Lake Michigan pollution problem. p21 ... Dec 12
Lake Michigan's salmon loss blamed on DDT. B p60 ... Dec 19

LAND CLEARING, LANDSCAPING, see: LAND DEVELOPMENT

LAND DEVELOPMENT see also: CITIES, PLANNING
Public land agencies pushed to control urban growth. p256 Sep 19
Progress may threaten Virgin Islands. p12 ... Dec 5

LANDSLIDES, see: ACCIDENTS, DISASTERS; SOIL

LASER
Lasers just right for surveys,*. p54 ... Aug 29

LEASE PURCHASE, see: BUILDINGS • Federal

LEGAL DEVELOPMENTS see also: CONGRESS; FEDERAL ISSUES
Settlement of Boundary Dam constructors' suit. CW p9 . Jul 4
NY State assessed for road noise. p32 ... Jul 11
Calif bill transfers oil royalties to Water Project. p33 .... Jul 11
Houston: diversion of job payment charged to a contractor. p9 ... Jul 11
AIA attack on industry's liability confusion. e p104 .... Jul 11
One last stand against plastic pipe,**. p32 ... Aug 1
First open housing lawsuit, in Baton Rouge, La. B p14 .. Aug 8
N.J. court halts Morris County building while sewage plant pollutes river. CW p7 ... Aug 15
Ill: architect judged at fault in "sinking school" case. p21 ... Aug 15
Suit over plastic pipe: time running out. CW p9 ... Aug 22
Wright Patman wants probe of bank-corporate ties. WO p27 ... Aug 29
Manila apt bldg collapse: multiple homicide laid to architect, engineers. p38 and e p112 ... Aug 29
14 construction firms indicted on bids to three NYC utility companies. p105 ... Aug 29
W. Va. ex-governor acquitted in graft case. p22 ... Sep 12
First suit by a survivor of Pt. Pleasant Bridge collapse. CW p75 ... Sep 19
Oakland, Calif: Utility District settles on water tank collapse. p18 ... Sep 26
NYC: accused cites utility in bid rigging. p66 ... Sep 26
Cincinnati: constitutionality of zoning ruling challenged. p26 ... Oct 3
Calif union estimators file charges. p85 ... Oct 10
1963 Baldwin Hills Reservoir collapse to U.S. Supreme Court?*CW p13 ... Oct 24
Plastic pipe still embattled. B p31 ... Oct 24
Baldwin Hills Reservoir failure case to U.S. Supreme Court? p12 ... Oct 31
Compromise expected on High Mountain Sheep Dam controversy. p21 ... Oct 31
Malaysia bldg collapse may cause law change,*. p33 .... Nov 7
Suits halt Fort Wayne, Ind. building at 18th floor. p45 . Nov 7
Pa. sludge spill inspires new legislation. p19 and e p92 .. Nov 14
Mergers: big design firms grow bigger. p73 ... Nov 14
Georgia's Water Quality Control Board wins suit against Atlanta polluter. CW p9 ... Nov 21
Oil firms' motion fails in Baldwin Hills Reservoir collapse suit. p22 ... Nov 21
Valont Dam suits pending. CW p7 ... Dec 5
Valont Dam disaster survivors offered quick settlement. p18 ... Dec 12
Seattle: suit filed over proposed stadium. p23 ... Dec 12
Fine for violating Ontario Safety Act. B p60 ... Dec 19
Suit settled on '67 damage to Chesapeake Bay Bridge-Tunnel. B p60 ... Dec 19

LIGHTING
Washington Natl Airport gets red and white runway lights. B p14 ... Aug 8

LOCKS see also: DAMS; RIVERS
Temporary lock on the Ohio R., unit prices. p45 .... Sep 5
Proposal for Welland Canal superlocks postponed. B p60 Dec 19

LUMBER
FTC tackles lumber grades as Commerce backs out. WO p11 ... Jul 4
Salt Lake City: timber arena dome is world's largest,**. p44 ... Oct 10
Prices up. CW p9 ... Nov 21
More govt timber asked for homebuilding. WO p9 .... Dec 5

M

MANAGEMENT & PRODUCTIVITY see also: SPECIFICATIONS & STANDARDS; BUILDING DESIGN • Prefabs & Systems; PLANNING
Great Lakes' life is threatened; systems approach needed. p23 ... Jul 4
Low-cost prefab housing now in France - U.S. next?**. p34 ... Jul 25
Cornell U. report: disposable housing might end shortages. p34 ... Aug 1
ASCE's systems seminar, in Pittsburgh. B p21* ... Aug 22
URBS: systems building analysis. RCs p8 ... Aug 29
Systems building overrated, no cheaper than standard units. RC p6 ... Oct 3
Builders warned: embrace systems or be replaced,*. p15 Oct 3
View of systems building in Europe. RC p16 ... Oct 17
PCI prepares for systems building. p32 ... Oct 17
England favors component building over systems. p32 .. Oct 17
and RC p8 ... Nov 7
URBS building system accepted: components are coming, diag,*. p177 and e p88 ... Oct 24
and RC p8 ... Nov 7
and RC p16 ... Nov 28
URBS cut, but bidders remain. p16 ... Oct 31
SEF and RAS: systems building invades Canada,**. p29 Nov 7
George Air Force Base, Calif: mobile factory to produce housing on site,*. p31 ... Nov 7
Florida's SSP systems building attacked. p33 ... Nov 28
Engineer's role in systems building. RC p6 ... Dec 12

MAPPING, see: SURVEYING AND MAPPING

MARINAS, see: PORTS AND HARBORS

MASONRY, see: BRICKS, MASONRY

MATERIALS, see: EQUIPMENTS & MATERIALS see also: CONCRETE, STEEL, etc.

MEETINGS
AIA annual convention, in Portland, Ore,*. p16 ... Jul 4
Column Res Council and Soc for Experimental Stress Analysis, in Phila, May, 1969. B p14 ... Aug 8
Three impending structural engineers' meetings should have been coordinated. e p68 ... Aug 22
AGC natl conf will air seasonal unemployment, in Washington, D.C. CW p25 ... Aug 29
World Power Conf becomes World Energy Conf, in Moscow, diags. p36 ... Aug 29
Ohio Contractors Asen, in Columbus. p62 ... Sep 12
Sanitary engineering symposium at Cornell U., Ithaca. B B p86 ... Sep 19
47th annual Producers' Council meeting, in Chicago,*. p15 Oct 3
Fourth Inst for Intl Engineering, in Colorado Springs. p16 ... Oct 3
What's the point of an annual meeting that draws too few participants? e p92 ... Oct 3
Intl Bridge, Tunnel and Turnpike Asen, in Chicago. p23 . Oct 10
ASCE, in Pittsburgh. p28 ... Oct 10
AGC's midyear board meeting, in Boston,**. p83 ... Oct 10
Natl conf of contractors, owners and govt officials, in Washington, D.C. CW p23 ... Oct 17
and e p88 ... Oct 24
Prestressed Concrete Inst, in Seattle. p32 and e p116 ... Oct 17
Building Products Executives Conf. in Washington, D.C. p19 ... Oct 24
Associated Builders and Contractors, in Freeport, Grand Bahama,*. p81 ... Oct 24
Iron Workers Intl Union, in NYC. p81 ... Oct 24
Mortgage Bankers Asen, in Chicago,**. p53 ... Oct 31
Ontario General Contractors Asen. p54 ... Oct 31
Transp Engineering Conf sponsored by ASME and NY Acad of Sciences, in Washington, D.C. p33 ... Nov 7
Underground excavation experts, at Sacramento State Coll,*. p35 ... Nov 7
Natl Safety Council, in Chicago. p133 ... Nov 7
ICED's Notre Dame U conf on education for environmental design. e p156 ... Nov 7
p15 and e p76 ... Nov 21
AGC's seasonality-in-construction conf in Washington, D.C. p71 ... Nov 14
Annual Construction Conf of Cleveland Engineering Society,*. p15 ... Nov 21
U.S. Chamber of Commerce conf: task force to find cure for labor problems,**. p31 ... Nov 28
A salute to the U.S. Chamber of Commerce on conf. e p164 ... Nov 28
Virgin Island Conf on Caribbean Development, in St. Thomas. p12 ... Dec 5
CESO, federation of professional unions, formed in Bal Harbor. p54 ... Dec 5
AASHO, in Minneapolis,**. p15 and e p84 ... Dec 12
NHPA formed at NAACP conf in Washington, D.C.,*. p17 ... Dec 12
Amer Geophysical Union, in San Fran. p22 ... Dec 12
Natl League of Cities Conf, in New Orleans,*. p58 ... Dec 19

METRIC SYSTEM, see: SPECIFICATIONS & STANDARDS

MILITARY CONSTRUCTION, see: CONSTRUCTION BUSINESS

MINING, see: SOIL

MISSILES, see: SPACE & MISSILES

MODELS, see: SPECIFICATIONS & STANDARDS BUILDING DESIGN

MODULES, see: BUILDING DESIGN: Prefabs see also: SPECIFICATIONS & STANDARDS

MONORAILS, see: RAILROADS; TRANSPORTATION

MONUMENTS, see: BUILDINGS

MORTGAGES, see: HOUSING

MOVING, see: TRANSPORTATION

N

NASA, see: SPACE

NATIONAL ASSOCIATIONS, SOCIETIES ETC. — see subject

NAVY, NAVIGATION, UNDERWATER CONSTRUCTION
Swedish naval yard built inside rock island,**. p33 .... Jul 25
Japanese build underwater house. B p14 ... Aug 8
Vane shearer and bottom corer explore ocean bottom. p22 Sep 5
Calif: Divercon I, experiment for underocean construction,**. p24 ... Oct 3
Seabees learn fast roadbuilding in Vietnam,**. p43 .... Oct 3
San Fran: electronics helps dredges place underwater tubes. p21 ... Oct 31
Ocean floor mining off Hawaii? B p60 ... Dec 19

NOISE CONTROL, see: ACOUSTICS

NUCLEAR PHYSICS, see: ATOMIC ENERGY

O

OFFICES, see: BUILDINGS

OFFSHORE CONSTRUCTION
Old oil platforms get new lease on life,**. p21 ... Sep 12
Port of Oakland develops offshore marine terminal,*. p91 Sep 19
Cities and airports may float offshore. WO p9 ... Oct 31

OPERATIONS RESEARCH, see: MANAGEMENT & PRODUCTIVITY

OVERPASSES, see: BRIDGES

P

PAINT, see: ADHESIVES AND PAINT

PANELS, see: WALLS AND PANELS

PARKING, see: BUILDINGS; CITIES; PAVING; TRAFFIC

PAVING, see also: CONCRETE; HIGHWAYS
Fast-Fix cement patch carries plane in 30 minutes. p24 . Jul 4
Asphalt Inst names six to roll of honor. p66 ... Jul 18
Boeing Co.'s "instant" plastic paving laid in minutes. p44 ... Aug 1
HRB sponsors study for systems pavement design. p25 . Oct 3
Contractor speeds on Michigan raceway,**.p46 ... Oct 10
Runways test synthetic aggregate, Sinopal,*. p51 ... Nov 7
SMU, Dallas, studies interaction of soils and flexible pavements under load. B p20 ... Nov 14
Replacing taxiways at Pope AFB, unit prices. p53 .... Nov 14
Vibrator measures pavement strength,*. p41 ... Nov 28
Texas: slipform hinges on slab joint,**. p56 ... Nov 28
Full-depth asphaltic runway laid on clay at Bishop Airport, Mich.,**. p28 ... Dec 5

PIERS, see: BRIDGES; PORTS

PILES, see also: SOIL
Brazil: tide-riding rig rings itself with piles, diags,*. p41 ... Jul 11

PIPES
House leaves little in pipeline safety bill. WO p25 .... Jul 11
Brazil: oil dock serves inland refinery,*. p15 ... Jul 25
USSR: natural gas from Siberia in 8-ft-dia steel pipelines. B p21 ... Jul 25
One last stand against plastic pipe,**. p32 ... Aug 1
Great Britain: pipelayer plows sewer in quickly,**. p44 . Aug 1
Suit over plastic pipe: time running out. CW p9 ... Aug 22
Correction of "Plastic Pipe Okayed." RC p8 ... Aug 29
Pipeline to bring natural gas from field storage to St. Louis. B p38 ... Aug 29
Australia: NSW govt RR to lay lines competing with private pipes. B p38 ... Aug 29
Techite pipe, first glass reinforced plastic pipe, gets its own plant,*. p53 ... Aug 29
Natural gas pipelines do not need federal regulation. RCs p4 ... Sep 5
Rifled pipeline makes liquids or slurries spin for faster travel. p16 ... Sep 5
Ohio approves plastic pipes. B p23 ... Sep 5
Insulated pipes keep Coast Guard's pierside services safe from cold, spray, debris. p23 ... Oct 3
Expansion for gas pipeline system between La. and N.J. B p36 ... Oct 17
Plastic pipe still embattled. B p31 ... Oct 24
Canada: thin steel culverts carry earthmovers,*. p22 .... Oct 31
Pipe carrier juggles 150-ton sections in South Calif,**. p42 ... Nov 7
Nova Scotia plastic pipeline requires new methods,**. p81 Nov 7
Montana flood water conduit, unit prices. p101 ... Nov 7
U.S. Steel defers increase on Buttweld pipe to '69. p141 Nov 7
Gas industry record for construction set. p73 ... Nov 14
Egypt to have Suez-Alexandria oil pipeline. B p16 ..... Dec 5
Boston to import gas from Algeria. B p16 ... Dec 5
Japan RR plans pipelines to carry oil and fuel products. B p22 ... Dec 12

PLANNING & ENVIRONMENT see also: ARCHITECTURE; CITIES; ZONING; MANAGEMENT
Moscow is replanning to depopulate and humanize,*. p30 Jul 11
HUD grants hinge on regional planning. p13 ... Jul 18
Planning consultant goes public. p73 ... Jul 25
Planners needed for model cities. p35 ... Aug 1
Japan to integrate urban planning agencies into new National Development Ministry. B p14 ... Aug 8
Nation's first linear transit park under BARTD elevated section. B p38 ... Aug 29
Air traffic congestion requires additional airports and facilities. e p112 ... Aug 29

Baltimore: team approach sets pattern for road design, map,**. Cover and p26 ... Sep 12
and e p276 ... Sep 19
Torrance, Calif, Del Amo Center aims at planning marks, **. p82 ... Sep 19
HUD planning grants tallied. B p86 ... Sep 19
Public land agencies pushed to control urban growth. p256 Sep 19
ICED seeking approval for policy statement on project criticism. CW p15 ... Oct 10
Alan M. Voorhees, president of AIP,**. p25 ... Oct 31
DOT establishes newest environmental directorate WO p27 Nov 7
Highway-oriented planning criticized. p33 ... Nov 7
Lawrence Halprin: cities don't have to be ugly,**. Cover and p53 ... Nov 7
ICED's Notre Dame U conf on education for environmental design. e p156 ... Nov 7
p15 and e p76 ... Nov 21
Landscape architects launch study of their profession. CW p9 ... Nov 21
Albert Mayer: all need a better environment,*. p15 ... Nov 21
Highway corridor development aid planned,**. p19 ... Nov 21
and e p164 ... Nov 28
Progress may threaten Virgin Islands. p12 ... Dec 5
DOT approves corridor approach for Chicago Expressway. p20 ... Dec 12

PLASTICS, RUBBER

Extruded foamed plastic builds a house, diag,**. p22 ... Jul 18
Boeing Co.'s "instant" plastic paving laid in minutes. p44 ... Aug 1
Buckling forms plastic roofs,*. p16 ... Sep 5
Collapsible rubber bags store stormwater overflow in Washington, D.C., Ohio and Md.,**. p14 ... Oct 31
Plastic lane markings on Mich. hwys. B p23 ... Oct 31

PLYWOOD, see: LUMBER

PORTS & HARBORS

Rivers and Harbors bill goes to conference. p15 ... Jul 25
Port spending still big, but off. p33 ... Aug 29
Port of Oakland develops offshore marine terminal,*. p91 Sep 19
PNYA plans super terminal to serve passenger liners. B p20 ... Sep 26
Insulated pipes keep Coast Guard's pierside services safe from cold, spray, debris. p23 ... Oct 3
Study for modernization of ports. CW p23 ... Oct 17
Pa. excursion boat hosts Smithfield Bridge inspectors,*. p28 ... Oct 24
Plan to deepen and stabilize Oregon Inlet, Shallowbag Bay, N.C. B p36 ... Nov 7
Illinois: hole blown in rock becomes a barge slip,**. p62 ... Nov 7
New Orleans to improve Delta Terminal area. B p20 ... Nov 14
NYC's passenger ship terminal cleared,*. p36 ... Nov 28
N.J. starts private container port, Port Jersey. p21 ... Dec 12

• Foreign

Universe Ireland the latest of superships spurring port projects,*. p20 ... Aug 22
Argentina: silt may close Buenos Aires port. p15 ... Sep 5
Brazil: tide-riding rig rings itself with piles, diags,*. p41 ... Jul 11
Brazil: oil dock serves inland refinery,*. p15 ... Jul 25
Canada: neither time nor tide tethers St. Lawrence wharf job,**. p42 ... Oct 24
Guinea: railroads, port to open mines, map. p41 ... Nov 28
Japan starts port facilities for A-powered ships. B p25 ... Jul 4
Japan: ship grades Nagoya Harbor bottom,*. p21 ... Oct 3
Kuwait: Yugoslav firm to improve Suwayq Harbor. B p16 Dec 5
Swedish naval yard built inside rock island,**. p33 ... Jul 25
Sweden: Stockholm has govt pay for ships' oil slick cleanup. B p38 ... Aug 29
Taiwan boom spurs $60-m port job, diag,*. p56 ... Nov 7

POWER see also: ATOMIC ENERGY; DAMS; RIVERS; UTILITIES

Mich. utilities ask FPC to license pumped-storage plant at Ludington. CW p9 ... Jul 4
Mediation expands New River hydro project on Va.-N.C. border. p14 ... Jul 18
Coulee's power plant will really be grand, diag,**. p34 and e p100 ... Jul 18
Kinzua Dam's powerhouse moves water in three directions, diag,**. p26 ... Aug 8
and RC p4 ... Sep 12
FPC approves NY pumped storage on Hudson near Cornwall. p12 ... Aug 15
New systems to prevent blackouts. p16 ... Aug 22
Pumped-storage ideas at Moscow's World Power Conf, diags. p36 ... Aug 29
NY Power Authority files for Gilboa-Blenheim pumped-storage. p38 ... Aug 29
Cornwall, N.Y. pumped-storage plant delayed by Scenic Hudson Preservation Conf. e p76 ... Sep 12
Hydro costs still moving higher. p107 ... Sep 19
FPC proposes open bidding. p16 ... Sep 26
Senate subcommittee defers thermal pollution hearings. B p20 ... Sep 26
Outlook for pumped-storage. e p76 ... Sep 26
Reprieve for underground transmission lines. p25 ... Oct 3
On using compressed air for pumped storage. RC p6 ... Oct 10
Report to President maps measures to reduce utility eyesores. p86 ... Oct 10
Colorado R. bill prepayment provision lets BuRec help utilities' construction. e p100 ... Oct 10
Crane pierces Pa. cooling tower,*. p33 ... Oct 17
and RC p8 ... Nov 7
Coulee power plant plan unveiled,**. p34 ... Oct 17
$15-billion power pact in the Pacific Northwest,*. p21 ... Oct 31
NYC opposes pumped-storage project on Hudson R. near Cornwall. B p20 ... Nov 14
Loan for power plant addition to Basin Electric Coop. of Bismarck, N.D. B p25 ... Nov 21
Big Bend Dam's power plant controlled by remote supervisory control system from Oahe Dam. B p16 ... Dec 5
San Fran: Hetch Hetchy enlargement asked. p20 ... Dec 12
Okla's Thermal Systems, Inc. supplies steam and chilled water to Tulsa. B p22 ... Dec 12
Three utilities to build plant near Newburgh, N.Y. B p22 ... Dec 12
Irrigation and hydro costs, indexes-BuRec. p76 ... Dec 19

• Foreign

Argentina: El Chocon hydro bid call. B p21 ... Jul 25
Argentina and Uruguay in electric power sharing project. B p38 ... Aug 29
Argentina: many Germans among bidders on El Chocon hydro project. CW p7 ... Sep 12
Argentina's El Chocon award due. p21 ... Oct 3
Argentina: Impregilo lands El Chocon Dam, map. p16 ... Oct 31
Brazil reverses Capivari R. for power, diag,**. p28 ... Oct 31
Brazil gets World Bank loan for hydro projects. CW p25 ... Nov 7
Canada: cliff climber protects Labrador's Twin Falls power plant,**. p28 ... Jul 25
Canada: contract to excavate Churchill Falls underground powerhouse. CW p27 ... Aug 1
Canada's Churchill Falls hydro: $23-m for odd jobs. B p16 ... Aug 15
Canada: Manitoba's Nelson R. Project has world's longest, highest voltage dc transmission lines, map,**. p34 ... Aug 15
Canada: additional partner in Churchill Falls contract. RC p16 ... Oct 17
Canada: bond issue for Churchill Falls (Labrador) Corp., Ltd. CW p7 ... Oct 31
Canada's Portage Mountain project rates superlatives,**. p34 ... Nov 7
Canada: Churchill Falls hydro project builders study two more developments. CW p11 ... Nov 14
Canada: Churchill Falls raise climber surfaces,**. p15 ... Dec 5
Canada: plant for Bath, Lake Ontario. CW p11 ... Dec 12
Chile: hydro power affected by severe drought. p15 ... Sep 5
Cuba: contract renewed for electric power plant at Guantanamo Bay. B p23 ... Sep 5
Ecuador: Guayas R. hydro survey. B p25 ... Jul 4
Great Britain questions delays in power stations construction. CW p9 ... Jul 25
Great Britain: Scotland's pumped-storage on Loch Ness. B p23 ... Sep 5
Lesotho's Oxbow hydro dam B p38 ... Aug 29
Panama's new hydro on Bayano R. B p38 ... Aug 29
Sweden plans underground pumped-storage. CW p75 ... Sep 19
Thailand to build new dam on Nan R. for added power. B p16 ... Dec 5
Turkey gets World Bank loan for transmission line from Keban Dam. CW p25 ... Nov 7
Turkey gives Japanese contract for multipurpose hydro project. B p16 ... Dec 5
USSR's tallest steel smokestack for Uglegorsk thermal plant,*. p92 ... Sep 19
Zambia: second powerhouse for Kariba Dam. B p23 ... Sep 5

PRICES, see: CONSTRUCTION BUSINESS

PRODUCTIVITY, see: MANAGEMENT & PRODUCTIVITY

PRODUCTS — see PRODUCT MANUFACTURERS

PUBLIC WORKS, see: Project in question see also: CONSTRUCTION BUSINESS; ECONOMY

PUMPED STORAGE: see POWER

PUMPS, PUMPING PLANTS

Pumping station for S. Nevada's Water Project mostly underground,*. p29 ... Jul 11
Indiana: concrete pumped 504 ft straight up to a record. p26 ... Dec 5
and RC p6 ... Dec 12

R

RADAR, RADIO, see: COMMUNICATIONS

RADIOACTIVITY, RADIATION, see: ATOMIC ENERGY

RAILROADS see also: SUBWAYS; TRANSPORTATION; TUNNELS

HUD grant to Chicago for rail transit cars. B p25 ... Jul 4
Italy: Florence-Rome express rail line. B p25 ... Jul 4
Japan's first suspended monorail line. B p34 ... Jul 11
Japan: high-speed rail line to connect Hokkaido Island with Kyushu Island. CW p7 ... Jul 18
French monorail rides on air,*. p16 ... Jul 18
Spanish rail line connects Burgos with Madrid. B p24 ... Jul 18
Wuppertal, Germany's monorail damaged by truck,*. p86 Sep 19
Senator scores delays on New York-Washington high-speed rail. p18 ... Sep 26
Japan plans high-speed, $14-billion rail network, map. p18 ... Oct 3
Phila transportation merger paves way for computer rail improvement. CW p15 ... Oct 10
Compound treats high-speed train ballast. p26 ... Oct 10
L.A. funicular preserved as cultural monument,*. p26 ... Oct 24
Gas-turbine-powered train service between NY and Boston. B p31 ... Oct 24
Cleveland has first U.S. airport transit link,*. p22 ... Nov 21
Chicago: rail transit lines lie in road median,*. p43 ... Nov 28
Rail costs climb again. p84 ... Dec 19

RECLAMATION, see: SOIL; WATER RESOURCES

RESEARCH & TESTS see also: SPECIFICATIONS AND STANDARDS

Tests for chemical dispersal of warm fog at airports,**. p38 ... Jul 11
Sweden hits lake pollution with three studies,*. p46 ... Jul 11
U. of Wis. concrete creep study in bldgs close to home. p19 ... Jul 25
Japan uses real earthquakes to study antiseismic designs of nuclear power plant components. B p21 ... Jul 25
Washington, D.C.'s first subway station tested above ground,*. p41 ... Aug 1
Researchers try polluting pollution. p16 ... Aug 15
Researchers sift garbage in solid waste study. p20 ... Aug 22
Vane shearer and bottom corer explore ocean bottom. p22 Sep 5
Sweden: aluminum sulfate may save dying lakes. p23 ... Oct 3
HRB sponsors study for systems pavement design. p25 ... Oct 3
Compound treats high-speed train ballast. p26 ... Oct 10
South Calif team studies action of earthquakes on multistory bldgs. p45 ... Nov 7
L.A. computer predicts quake damage. p46 ... Nov 7

RESERVOIRS, see: WATER RESOURCES see also: BUILDINGS

RETAINING WALLS

San Fran freeway retaining wall doubles as flower box,*. p25 ... Jul 4
San Fran: Slurry-trench retaining walls protect subway station,**. p44 ... Jul 11

RIVERS see also: DAMS; POWER: WATER RESOURCES

Rivers and Harbors bill goes to conference. p15 ... Jul 25
Germany's Europe Canal to link three rivers, map,**. p48 Aug 29
Congress bans construction on riverside land in 22 states. B p20 ... Sep 26

• By name

Allegheny River

Oil sludge foam flowing down the Allegheny,*. p32 ... Nov 7
Pa. sludge spill inspires new legislation. p10 and e p92 .. Nov 14

Colorado River

Colorado R. bill clears House, authorizes Central Arizona Project. p13 ... Sep 12
Colorado R. bill prepayment provision lets BuRec help utilities' construction. e p100 ... Oct 10

Danube River

Danube R. countries meet to plan pollution control. CW p7 ... Dec 5

Mekong River

U.S. offers plan for big Mekong Dam, map. p15 and e p76 Sep 12
On Mekong Project. RCs p6 ... Oct 10

Missouri River

S. Dakota's Oahe Unit, part of basin development, authorized. B p14 ... Aug 8

Nelson River

Manitoba Hydro's Nelson R. Project, map,**. p34 ... Aug 15

Orange River, South Africa

Orange River Project's Verwoerd Dam job moves,**. p26 Nov 14

Peace River, British Columbia

B.C.'s Peace River goes to work,**. p34 ... Nov 7

Potomac River

Pollution control report. p28 ... Oct 10

Rio de la Plata

Correction on map of basin projects. RC p6 ... Jul 4

Uruguay River

Argentina and Uruguay agree on dam and bridge. CW p7 Jul 18

Yaguez River, Puerto Rico

Plans for channeling in Mayaguez. B p21 ... Jul 25

ROCKS, see: SOIL see also: EXPLOSIVES

ROOFS

Ohio's Blossom Music Center; ingenious structure solves acoustical challenge,**. Cover and p42 ... Jul 11
Huge space frame dominates Osaka's Expo '70,**. p22 Jul 25
Parachute roofs settle on French markets,*. p41 ... Aug 1
Minn. hyperbolic paraboloid hangar fits jets to a tee, **. Cover and p46 ... Aug 1
Calif. library roof truss doubles as op art,**. p32 ... Aug 8
London: Boeing hangar's space frame roof will span 453 ft,**. p13 ... Aug 15
Mexico: water-filled oil drums stabilize cable-suspended roof during concrete pouring,**. p14 ... Aug 15
Space truss roofs Princeton gymnasium,**. Cover and p24 Aug 22
Buckling forms plastic roofs,*. p16 ... Sep 5
Salt Lake City: timber arena dome is world's largest,**. p44 ... Oct 10
Circus tent gym roof for Iowa's Graceland Coll was no circus,**. p40 ... Oct 24

RUNWAYS, see: AIRPORTS; PAVING

S

SAFETY, see: ACCIDENTS & SAFETY

SANITATION, see: Health; SEWAGE; WATER POLLUTION

SCANDALS, see: ETHICS

SCHOOLS, see: BUILDINGS

SEABEES, see: NAVY

SEISMOLOGY, see: SOIL see also: INSTRUMENTS

SEWAGE: see also: WATER POLLUTION
Senate rewrites waste treatment aid bill, p33 ..... Jul 11
Interior hasn't given up on waste plant financing. WO p77 ..... Sep 19
Costs are rising faster. p108 ..... Sep 19
Paul D. Haney: manpower is pollution control's big problem. Cover, p24 and e p76 ..... Sep 26
Collapsible rubber bags store stormwater overflow in Washington, D.C., Ohio and Md., **. p14 ..... Oct 31
Sewerage costs hit record highs. p81 ..... Dec 19

• American

California
Concrete sewer contract in California is popular, unit prices. p37 ..... Jul 4

Illinois
Corps and Chicago's MSD put dredge spoil through treatment plant. p20 ..... Aug 22
Chicago sewer tunnel in rock, unit prices. p53 ..... Nov 14

Kansas
Kansas sewer bid under estimate, unit prices. p101 ..... Nov 7

Maryland
Sewer is over estimate, unit prices. p164 ..... Sep 19

Massachusetts
Storm brews over Boston's Deer Island treatment plant. p22 ..... Nov 21

Michigan
Road and sewer job, unit prices. p54 ..... Oct 3
Sewer odors require vinyl cover-up job, **. p43 ..... Oct 10
and RC p6 ..... Nov 14

Missouri
St. Louis pollution project pares cost as prices soar, *. p34 ..... Oct 3

Nebraska
Storm sewer channel in Nebraska, unit prices. p69 ..... Jul 11

New Jersey
N.J. court halts Morris County building while sewage plant pollutes river. CW p7 ..... Aug 15

New York
NYC's Hudson R. plant to go without fountains. B p22 ..... Dec 12

Oregon
Wide spread on bids for sanitary sewer, unit prices. p172 ..... Sep 19

• Foreign
Great Britain: pipelayer plows sewer in quickly, **. p44 ..... Aug 1

SHIPWAYS, see: CANALS; PORTS & HARBORS

SHIPYARDS: see PORTS and HARBORS

SKYSCRAPERS, see: BUILDINGS

SLUM CLEARANCE, see: CITIES; HOUSING

SMALL BUSINESS ADMINISTRATION, see: ECONOMY

SNOW, see: WEATHER

SOCIETIES, see: SUBJECT, e.g. ENGINEERING; RESEARCH, etc.

SOIL AND FOUNDATIONS see also: WEATHER
N.H.'s Old Man of the Mountain gets physical checkup, map, **. p26 ..... Jul 25
Costa Rican volcano rips remote villages and roads. p12 ..... Aug 8
New techniques in permafrost construction at Manitoba's Nelson R. Project, map, **. p34 ..... Aug 15
and RC p38 ..... Sep 19
Caterpillar land clearing project in Malaysia. p20 ..... Aug 22
Oakland, Calif's quake code calls for underground reservoir, **. p14 ..... Sep 5
Vane shearer and bottom corer explore ocean bottom. p22 Sep 5
BuRec's Barney Bellport, **. Cover and p28 ..... Oct 3
Pa. viaduct builder defies Conneaut Swamp, diags, **. p44 Oct 17
and RC p8 ..... Nov 7
Hawaii engineer develops "aggregation index" for tropical soil. B p20 ..... Nov 14
SMU, Dallas, studies interaction of soils and flexible pavements under load. B p20 ..... Nov 14
Railroad, port to open mines in Guinea, map. p41 ..... Nov 28
Construction in Antarctica, map, **. Cover and p62 ..... Dec 19

• Dredging
Rio de Janeiro's Copacabana Beach widened. B p21 ..... Jul 25
Corps and Chicago's MSD put dredge spoil through treatment plant. p20 ..... Aug 22
Silt may close Buenos Aires port. p15 ..... Sep 5
Ship grades Japanese bay bottom, *. p21 ..... Oct 3
World's biggest dredge on Corps' Fla. flood control project, *. p25 ..... Oct 3
Floating dredges work tight, *. p41 ..... Sep 26
San Fran: electronics helps dredges place underwater tubes. p21 ..... Oct 31

• Earthmoving, Excavating
A-blasts for excavation: time for commercial use. WO p9 Jul 18
For joint nuclear excavation research by U.S. and USSR. e p92 ..... Jul 25
Canada: contract to excavate Churchill Falls underground powerhouse. CW p27 ..... Aug 1
Mole adapts to varying soil in Hamburg, Germany, *. p43 Aug 1
Great Britain: Badger Major, pipelayer plows sewer in quickly, **. p44 ..... Aug 1
Tunneling boom calls for improved methods. p23 ..... Sep 5
Osaka office bldg bordering excavation tilts backwards, *. p30 ..... Oct 17
Washington interested in underground excavation. WO p15 Oct 24
Corps drops nuclear excavation plan to open Idaho quarry. p30 ..... Oct 24
Illinois: hole blown in rock becomes a barge slip, **. p62 ..... Nov 7
Corps' Pre-Gondola nuclear excavation test in Montana, *. p21 ..... Nov 14
Need for advances in underground excavation. e p76 ... Dec 5
Ocean floor mining off Hawaii? B p60 ..... Dec 19

• Earthquakes & Landslides
Japan uses real earthquakes to study antiseismic designs of nuclear power plant components. B p21 ... Jul 25
Manila quake collapses apt bldg; Mexico City quake does little damage, *. p12 ..... Aug 8
Investigation of Manila apt bldg quake collapse. CW p7 . Aug 15
Japan landslide sweeps two tour buses into river. CW p9 ..... Aug 22
Manila apt bldg collapse laid to poor design. p16 ..... Aug 22
Manila apt bldg collapse: multiple homicide laid to architect, engineers. p38 and e p112 ..... Aug 29
Iranian earthquakes kill 20,000, map, *. p16 ..... Sep 12
Torrance, Calif, Del Amo Center meets L.A. new seismic code requirements, **. p82 ..... Sep 19
South Calif team studies action of earthquakes on multistory bldgs. p45 ..... Nov 7
L.A. computer predicts quake damage. p46 ..... Nov 7
Experts meet on the ubiquitous quake: still a lot to learn. p22 ..... Dec 12
Two Illinois dams undamaged by quake. B p22 ..... Dec 12

• Erosion, Shore Protection, Land Reclamation
N.J. puts off action on Hackensack R. swamp reclamation. CW p9 ..... Jul 4
Correction on engineers for Lake Pontchartrain flood control barriers. RC p3 ..... Sep 26
Phila: Delaware R. fill forms 70-acre complex, Penn's Landing, **. p25 ..... Oct 24
N.J. plans new city for Hackensack R. marshes, map. p13 ..... Dec 5
N.J.'s Hackensack Meadow reclamation: question of priority. e p84 ..... Dec 12

• Foundations
Mass. contractor hauls mountain for hwy embankment fill, **. p18 ..... Aug 22
Bulkhead slides into excavation of L.A. insurance office bldg, *. p18 ..... Sep 26
"Swiss cheese" rock slows Turkey's Keban Dam. p19 ... Sep 26
Land sinks along Sacramento freeway job, **. p22 ..... Oct 10
Osaka office bldg bordering excavation tilts backwards, *. p30 ..... Oct 17
Uruguay tries grouting cracks in Canelon Grande Dam, **. p48 ..... Oct 17
World Trade Center: tallest towers' foundation: water out, trains in, diag, **. p30 ..... Oct 31
Oakland: grout curtain seals excavation at BARTD tunnel site, **. p67 ..... Nov 28

SONIC BOOM, see: AIRCRAFT

SPACE AND MISSILES
Soviet conciliation may scrap Sentinel antimissile system. WO p11 ..... Jul 4
Military construction will slow with nuclear arms race. p14 ..... Jul 18
Collapse of Cape Kennedy antenna due to faulty installation. B p21 ..... Jul 25
First Sentinel antiballistic missiles near Boston. CW p7 ..... Sep 5
Sentinel antimissile system cleared for action, *. p12 ... Sep 12
First Sentinel contract for Mass. project. B p26 ..... Oct 3
Prototype design for Mass. Sentinel sites. B p22 ..... Dec 12

SPECIFICATIONS, STANDARDS see also: BUILDING CODES; RESEARCH & TESTS; LUMBER
FTC tackles lumber grades as Commerce backs out. WO p11 ..... Jul 4
ASTM approves inspection, testing standards. p15 ..... Jul 4
One last stand against plastic pipe, **. p32 ..... Aug 1
Congress backs metric study; expensive, but worth it. WO p7 ..... Aug 8
e p88 ..... Aug 22
Suit over plastic pipe: time running out. CW p9 ..... Aug 22
Correction of "Plastic Pipe Okayed." RC p8 ..... Aug 29
Ohio approves plastic pipes. B p23 ..... Sep 5
On adoption of metric system. RC p10 ..... Oct 10
Rio p4 ..... Oct 31
Metric system urged for U.S. p58 ..... Dec 19

STATE FINANCING, see: CONSTRUCTION BUSINESS • Financing; BONDS

STEEL
First use of "true" hybrid steel beams on Texas bridge. p19 ..... Jul 25
Floor joist system saves steel at Kansas shopping center, * .p19 ..... Jul 25
Steel companies' outlays for pollution control facilities. CW p5 ..... Aug 8
Steel prices up, President comes out fighting. p10 ..... Aug 8
Calif library steel roof truss doubles as op art, **. p32 ..... Aug 8
Steel settlement and price rises: who creates inflation? e p76 ..... Aug 8
Causes of brittle fracture. RC p4 ..... Aug 15
Structural steel boosts stick. p11 ..... Aug 15
Testimonial to steel. RC p6 ..... Aug 22
Plastic design course by AISC. B p21 ..... Aug 22
Warehouse steel prices up. CW p7 ..... Sep 12
Does the chemistry of reinforcing bars need better control? e p118 ..... Oct 17
and RC p6 ..... Nov 21
and RC p4 ..... Dec 5
Chance to compete for AISI's annual Design in Steel award. B p25 ..... Nov 21

STRATEGIC AIR COMMAND, see: SPACE

STRUCTURAL FAILURES, see: ACCIDENTS AND FAILURES

SUBWAYS, see also: CITIES; RAILROADS; TRANSPORTATION
Bay Area Rapid Transit District job - see: CITIES, San Francisco.
Southern California Rapid Transit District job - see: CITIES, Los Angeles.
Washington, D.C. rail transit financing hitch. CW p23 ... Jul 11
Amsterdam ready to start 55-mile transit system. p16 .. Jul 18
Extension for Phila-Lindenwold, N.J. rail transit line studied. B p24 ..... Jul 18
Washington, D.C.'s first station tested above ground, *. p41 ..... Aug 1
Senate should restore D.C. transit funds held back by House. e p120 ..... Aug 1
D.C. transit funds in limbo. CW p5 ..... Aug 8
NYC's MTA works on $1.27-m transit expansion. CW p25 Aug 29
New York City subway substation, unit prices. p70 .... Aug 29
Congress should approve funds for D.C. transit. e p78 .. Sep 12
NYC approves 12 new rail transit routes. CW p6 ..... Sep 26
Cleveland mayor for more urban rapid transit, fewer hwys. B p20 ..... Sep 26
Shields, special liner cut Tokyo subway cost, **. p40 ... Oct 3
Atlanta transit system (MARTA) trips on cost. p74 .... Oct 3
Phila transportation merger paves way for subway extension. CW p15 ..... Oct 10
Frankfurt subway rolls. CW p15 ..... Oct 10
Rail transit system for Prague. CW p23 ..... Oct 17
Atlanta transit system safe on ballot. CW p13 ..... Oct 24
Baltimore transit study unveiled. CW p13 ..... Oct 24
St. Louis to speed bus service while rail plans are under way. B p31 ..... Oct 24
RC p6 ..... Nov 14
Baltimore unveils transit plan, map. p15 ..... Oct 31
Amer Transit Assn wants natl trust fund. B p23 ..... Oct 31
New York transit job awarded, unit prices. p38 ..... Oct 31
Federal grant for Boston area mass transit system. B p20 ..... Nov 14
First subway in Arab world for Cairo. CW p7 ..... Dec 5
Cost-benefit ratio 1:3 for planned D.C. rail system. p15 . Dec 5
Partial service begun between Lindenwold and Camden, N.J. B p22 ..... Dec 12
Munich: subway construction site explosion. B p80 ..... Dec 19

SURVEYING AND MAPPING
Geodimeter 77 to measure both distance and direction. p44 ..... Jul 18
Lasers just right for surveys, *. p54 ..... Aug 29

SYSTEMS, see: MANAGEMENT; BUILDING DESIGN, • Prefabs, Standardized Systems

T

TAXATION & TARIFFS, see also: ECONOMY
Tax bill's provision on industrial-aid bonds stirs a flap. p48 ..... Jul 4
January woes: tax bill sleeper mandates reform. WO p25 Jul 11
Calif: sales tax approved for SCRTD finance. p106 ..... Aug 1
San Francisco gross receipt tax. p69 ..... Sep 5
Congress' "temporary" and "permanent" taxes. e p84 .. Sep 5
Watson Amendment ban-the-bond idea jars Calif. p58 .. Sep 12
Calif program for property tax reduction a countersttack on Watson Amendment. CW p75 ..... Sep 19
Revised tax laws needed on buildings, property. WO p11 Sep 26
10% surcharge extension possible next year. WO p15 ... Oct 24
10% tax surcharge works, deficit lessens. WO p9 ..... Oct 31
Treasury man decries capital gains bailout. p32 ..... Nov 7

TELEPHONE, see: UTILITIES

TELEVISION, see: COMMUNICATIONS

TOLL FACILITIES
Spanish tollroad concession. B p24 ..... Jul 18
Argentina seeks concessionaire to operate the two Morandi toll bridges. B p24 ..... Jul 18
Pa. studies tollroad expansion. p48 ..... Aug 22
Fed Hwy Admin to decide on tolls for two Del. R. Port Authority bridges, *. p106 ..... Aug 29
W. Va. toll bridge is closed as consultant cites hazards. p17 ..... Oct 3
Calif. bill to raise tolls on San Fran-Oakland Bay Bridge fails. p74 ..... Oct 3
Tollway officials against DOT's authority over tollroads. p23 ..... Oct 10
Italy's tollroad system a success, plans to expand. B p31 ..... Oct 24

TRAFFIC
Colorado installs electronic traffic counting system. B p34 ..... Jul 11

TRAMWAYS, see: CABLES; TRANSPORTATION

TRANSPORTATION see also: HIGHWAYS; RAILROADS; SUBWAYS
Bay Area Rapid Transit District job - see: CITIES, San Francisco

Southern California Rapid Transit District job - see: CITIES, Los Angeles.
House committee slashes DOT nonhighway budget. WO p11 ... Jul 4
National transportation fund? e p68 ... Jul 4
Jersey City: Journal Square Transportation Center for all modes,**. p18 ... Jul 25
Advance funding for urban mass transit. p20 ... Jul 25
DOT hacked again; transit and airports hit. WO p7 ... Aug 8
Anniversary finds DOT plugging cautiously,**. p12 ... Aug 8
Milwaukee regional planning for freeways, express buses, map,**. p26 ... Aug 22
President orders delay on four controversial D.C. freeway projects. CW p25 ... Aug 29
Hovercraft or hydrofoil for Puget sound studied by Wash. State. B p26 ... Oct 3
San Fran proposal for single agency over bridges, hwys and transit systems. CW p23 ... Oct 17
World Bank award for Indonesia's system. B p35 ... Oct 17
Presidential candidates for raising spending. WO p15 ... Oct 24
St. Louis to speed bus service while rail plans are under way. B p31 ... Oct 24
RC p6 ... Nov 14
Amer Transit Assn wants natl trust fund. B p23 ... Oct 31
DOT establishes newest environmental directorate. WO p27 ... Nov 7
Highway-oriented planning criticized. p33 ... Nov 7
Federal transit grants for Boston area and Chicago. B p20 ... Nov 14
$50-billion for Calif transportation. p44 ... Nov 28
Cost-benefit ratio 1:3 for planned D.C. rail system. p15 ... Dec 5
DOT will pay toward local service between poverty areas and job sites. CW p11 ... Dec 12

TRUSSES, see: BEAMS, GIRDERS, TRUSSES

TUNNELS
Montana: Great Northern Railway relocation tunnel holed through. B p34 ... Jul 11
Tunneling boom calls for improved methods. p23 ... Sep 5
Conn. tunnel built in open while trains run through,**. p34 ... Sep 26
Washington interested in underground excavation. WO p15 ... Oct 24
10-year tunnel R&D plan urged,*. p35 ... Nov 7
Colo's Divide Tunnel: quality of rock makes for difficulties, map,**. p64 ... Nov 28
Need for advances in underground excavation. e p76 ... Dec 5
Mole makes monkey of mountain on Nevada tunnel job,*. p19 ... Dec 12

• **Foreign**
Argentine highway tunnel avoids shifty Parana R. map,**. p32 ... Jul 18
Canada's work on Northumberland Strait Crossing suspended due to costs. CW p15 ... Oct 10
France: go-ahead for Frejus Tunnel through French-Italian Alps. CW p27 ... Nov 28
Great Britain: English Channel tunnel delayed to 1971. CW p11 ... Oct 3
Japan: shields, special liner cut Tokyo subway cost,**. p40 ... Oct 3
Swiss combine apparent low bidder for St. Gotthard Pass tunnel. CW p9 ... Nov 21

U

UNDERPASSES, see: TUNNELS

UNDERWATER CONSTRUCTION AND OPERATIONS, see: NAVY

UNIT PRICES, see: CONSTRUCTION BUSINESS

URBAN AFFAIRS, URBAN RENEWAL, see: CITIES

U.S., see: AIR FORCE; CONGRESS; ENGINEERS; NAVY, etc.

UTILITIES, see: POWER; COMMUNICATIONS; PIPES
New systems to prevent power blackouts. p16 ... Aug 22
14 construction firms indicted on bids to three NYC utility companies. p105 ... Aug 29
Group seeks ways to keep utility lines unobtrusive. p94 ... Sep 19
Costs continue to rise. p110 ... Sep 19
Oakland, Calif; Utility District settles on water tank collapse. p18 ... Sep 26
Malaysia gets World Bank loan for telephone installations. B p20 ... Sep 26
NYC: accused cites utility in bid rigging. p86 ... Sep 26
Report to President maps measures to reduce utility eyesores. p86 ... Oct 10
Gas industry record for construction set. p73 ... Nov 14
British Columbia's utility lines going underground. B p16 ... Dec 5

V

VENTILATION, see: AIR CONDITIONING, VENTILATION

VIADUCTS, see: BRIDGES

VIETNAM, see: INTERNATIONAL

W

WALLS AND PANELS, see also: RETAINING WALLS
Concrete panel framing system forms low-cost housing units in Washington, D.C.,**. p42 ... Aug 1
NYU's Technology II: precast facade panels are load bearing,**. p30 ... Aug 8
NYU's loadbearing precast reinforced concrete panels are not NYC's first. RC p6 ... Oct 3
Computer prefabricates walls,*. p23 ... Oct 3
Precast panels almost cast in place at NYC warehouse-office bldg,**. p38 ... Oct 3
Calif: walls move when VA hospital grows, diags,*. p37 ... Oct 10

WATER POLLUTION, see also: HEALTH & ENVIRONMENT; SEWAGE
Calif water quality cost put at $2-billion. p53 ... Jul 4
Sweden hits lake pollution with three studies,*. p46 ... Jul 11
Power for AEC to regulate thermal pollution from A-plants. p23 ... Jul 18
Unofficial truce on water quality standards. p24 ... Jul 18
Senate restores pollution control funds but chances fade for other pollution measures. WO p11 ... Jul 25
Another top man leaves FWPCA. p16 ... Jul 25
Steel companies' outlays for pollution control facilities. CW p5 ... Aug 8
N.J. court halts Morris County building while sewage plant pollutes river. CW p7 ... Aug 15
Interior in fight re regulations on water quality standards. WO p9 ... Aug 15
Researchers try polluting pollution in San Fran Bay. p16 ... Aug 15
USSR orders pollution halted. p14 ... Aug 22
Sen. Muskie's nomination: democratic gain means pollution control loss,*. WO p9 and p12 ... Sep 5
Pollution control measure uncertain in Congress' final weeks,**. p11 ... Sep 12
Interior hasn't given up on waste plant financing. WO p77 ... Sep 19
Senate subcommittee defers thermal pollution hearings. B p20 ... Sep 26
Paul D. Haney: manpower is pollution control's big problem,**. Cover, p24 and e p76 ... Sep 26
Sweden: aluminum sulfate may save dying lakes. p23 ... Oct 3
Annual meeting of WPCF draws too few participants. e p82 ... Oct 3
House passes omnibus package of pollution control. WO p17 ... Oct 10
Pollution reports advise money. p28 ... Oct 10
and e p116 ... Oct 17
Polluters of Caspian Sea ridiculed into action. p30 ... Oct 17
Lobby blamed for pollution bill death. p23 ... Oct 31
Oil sludge foam flowing down the Allegheny,*. p32 ... Nov 7
Interior Dept. reorganizes. p35 and e p156 ... Nov 7
Proposed Water Quality Improvement Act deserved to die: time for a new bill. e p156 ... Nov 7
Pa. sludge spill inspires new legislation. p19 and e p92 ... Nov 14
Georgia's Water Quality Control Board wins suit against Atlanta polluter. CW p9 ... Nov 21
Federal pollution funds stagnate for lack of imaginative projects. p23 ... Nov 21
Joe G. Moore, Commissioner of FWPCA,**. p30 ... Nov 21
Danube R. countries meet to plan pollution control. CW p7 ... Dec 5
Cost of cleaning up Lake Ontario about $300-m. p16 ... Dec 5
Corps, company solve Lake Michigan problem. p21 ... Dec 12
NYC: dial P for pollution. B p22 ... Dec 12
FWPCA reorganizes. WO p53 ... Dec 19
Calumet pollution conclave finds industry lagging. p59 ... Dec 19
Lake Michigan's salmon loss blamed on DDT. B p80 ... Dec 19

WATER RESOURCES see also: DAMS; IRRIGATION; LAKES; POWER; RIVERS
WATER QUALITY - see: WATER POLLUTION
Another $100-m bonds for Calif State Water Project. CW p9 ... Jul 4
Great Lakes' life is threatened; systems approach needed. p23 ... Jul 4
Dowsing in Bermuda. RC p16 ... Jul 11
Pumping station for S. Nevada's Water Project mostly underground,*. p29 ... Jul 11
Calif bill transfers oil royalties to Water Project. p33 ... Jul 11
Recruiting for waterworks takes selling. e p104 ... Jul 11
Loan to Luxembourg for water system. B p21 ... Jul 25
Congress authorizes S. Dakota's Oahe Unit. B p14 ... Aug 8
Water resource jobs face money bind. p16 ... Aug 8
Central Arizona Project lives. p16 ... Aug 8
Dowsing an occult activity. RC p4 ... Aug 15
RC p4 ... Sep 5
India drills for water to cope with monsoons,**. p30 ... Aug 22
Chile: drinking water scarce in severe drought. p15 ... Sep 5
Distribution system for Muscat and Oman. B p23 ... Sep 5
Arizona: BuRec's Project Skywater to increase rainfall by cloud seeding,**. p36 ... Sep 5
Colorado R. bill clears House, authorizes Central Arizona Project. p13 ... Sep 12
Bill sets up National Water Commission. B p22 ... Sep 12
Corps' Northeast Water study spawns contracts, map. p81 ... Sep 19
HUD loan to extend Anchorage transmission and distribution lines. B p20 ... Sep 26
Malaysia gets World Bank loan to increase water supply. B p20 ... Sep 26
Dowsing: no parapsychology lab at Rand Corp. RC p10 ... Oct 10
NYC's 15-mile water tunnel. CW p23 ... Oct 17
Is newly appointed National Water Commission necessary? e p88 ... Oct 24
Interior Dept. reorganizes. p35 and e p156 ... Nov 7

• **Aqueducts, Reservoirs**
Oakland, Calif's quake code calls for underground reservoir,*. p14 ... Sep 5
1963 Baldwin Hills Reservoir collapse to U.S. Supreme Court? CW p13 ... Oct 24
Baldwin Hills Reservoir failure case to U.S. Supreme Court? p12 ... Oct 31
Oil firms' motion fails in Baldwin Hills Reservoir collapse suit. p22 ... Nov 21

• **Treatment**
Bolsa Island project dies in Calif. p35 ... Aug 1
Calif: alternatives to Bolsa Island nuclear desalter studied. CW p9 ... Aug 22
Contract to Kaiser Engineers for pilot plants to test desalting brackish water. B p38 ... Aug 29
Calif: Bolsa Island revival? CW p7 ... Sep 5
Contract renewed for seawater conversion plant at Guantanamo Bay, Cuba. B p23 ... Sep 5
Calif: Bolsa Island project lives. CW p7 ... Dec 5
Calif: Bolsa Island Project goes ahead. CW p51 ... Dec 19

• **Waste Water Reclamation**
Colo: reverse osmosis waste treatment plant for Pikes Peak. CW p7 ... Jul 18

• **Waterworks, Water Mains**
Tight bidding on Tenn. waterworks, unit prices. p37 ... Jul 4
Costs soar in key accounts, indexes: Handy-Whitman. p82 ... Dec 19

WATERWAYS, see: CANALS; RIVERS

WEATHER
Tests for chemical dispersal of warm fog at airports,**. p36 ... Jul 11
Water and power running out in Chile drought. p15 ... Sep 5
Chemical fog dispersal proposed for Ore. and Calif. airports. B p86 ... Sep 19
Winds topple steel frame for Greenwich, Conn. office bldg. p18 ... Dec 12
Construction in Antarctica, map,**. Cover and p62 ... Dec 19

WELDING
Does the chemistry of reinforcing bars need better control? e p116 ... Oct 17
and RC p6 ... Nov 21
and RC p4 ... Dec 5

WHARFS, see: PORTS AND HARBORS

WIND, see: ACCIDENTS; WEATHER

WIRE, see: CABLES, WIRE

WOOD, see: LUMBER

Z

ZONING see also: BUILDING CODES; CITIES; PLANNING
Commission on bldg codes, zoning and land taxation policies – see: PLANNING
Cincinnati: constitutionality of zoning ruling challenged. p26 ... Oct 3

Part II

NAMES

ACKERMAN, ADOLPH J.
Engineers' responsibility in Pt. Pleasant Bridge collapse. RC p4 ... Jul 25
AGEE, WILLIAM M.
Housing builds Boise Cascade,**. Cover and p28 .... Dec 12
AGNEW, SPIRO T.
Agnew worries the mayors,*. p58 ... Dec 19
ALBRIGHT, GIFFORD H.
The new computer world of MODCON, Diag.**. Cover & p28 ... Jul 18
ALLEN, A. E.
Credits due in Kinzua Dam Project. RC p4 ... Sep 12
ALLIED MORTGAGE & DEVELOPMENT CO., MEMPHIS, TENN.
Computer cataloged housing. CW p23. ... Jul 11
ANGELL, LESTER W.
Lampreys in Great Lakes before St. Lawrence Seaway. RC p4 ... Sep 12
APRUZZESE, VINCENT
Labor problems may find a cure,**. p31 ... Nov 28
ARTHUR, HAROLD G.
BuRec promotes Arthur to Associate Chief Engineer,*. p44 ... Jul 25
ATKINSON, Guy F.
Dean of contractors dies at 93.*. p83 ... Sep 19

BAKER, JOE M., JR.
CCE: "Wrong Approach to unity." p140 ... Nov 28
BARNES, HENRY A.
N.Y. City traffic chief dies at 61. p85 ... Sep 19
BARRON, WILLIAM W.
Ex-governor acquitted in graft case; four guilty. p22 . Sep 12
BARTHALON, MAURICE
French Monorail rides on air,*. p16 ... Jul 18
BARTLETT, JOSEPH
Labor problems may find a cure,**. p31 ... Nov 28
BAUER, KURT W.
Regional planning for freeways, express buses,**. p28 Aug 22
BEALL, JAMES M.
Natural gas pipelines do not need federal regulation RC p4 ... Sep 5
BECK, HENRY C., CO.
Dallas firm seeks growth from within. p73 ... Nov 14
BELAUNDE TERRY, FERNANDO
Ousted Peru leader fears work halt,*. p35 ... Oct 17
BELLPORT, BERNARD P.
BuRec's Bellport: The hell with grandpa,**. Cover & p28 ... Oct 3
BINGHAM, JONATHAN B.
Highway-oriented planning criticized. p33 ... Nov 7
BITHELL, KEITH A.
ENR plays up architect over engineer. RC p6 ... Aug 22
BLOUNT, WINTON M.
Contractors and owners confer on soaring costs. WO p27 ... Aug 29
Calls natl. conf. to study rising costs. p23 ... Oct 17
Chamber of Commerce natl. conf. on rising costs. e p88 Oct 24
Need for closer cooperation between owners and contractors. CW p9 ... Nov 21
Labor problems may find a cure,**. p31 ... Nov 28
A salute to the Chamber of Commerce. e p164 ... Nov 28
Nixon picks pragmatic cabinet,**. p57 ... Dec 19
BOEING CO., SEATTLE, WASH.
Plastic paving laid in minutes. p44 ... Aug 1
BOGER, ROBERT F.
Retired publisher of ENR dies,*. p59 and e p186 ... Dec 19
BOISE CASCADE CORP.
Housing builds Boise Cascade,**. Cover and p28 .... Dec 12
BOND, ARNOLD
Diversion of job payment charged to a contractor. p91 Jul 11
BOOT, GEORGE, JR.
More on Detroit's Phoenix housing project. RC p3 .. Oct 24
BOYD, ALAN S.
Anniversary finds DOT plugging cautiously,**. p13 .. Aug 8
Democrats nail down a platform,**. p29 ... Aug 29
BRANNAN, ROBERT
Regional planning for freeways, express buses,**. p28 Aug 22
BRIDWELL, LOWELL
Anniversary finds DOT plugging cautiously,**. p13 .. Aug 8
Issues EEO order for highways,*. p23 ... Oct 10
Road hearing rules are fat in the fire,*. p13 ... Oct 31
Corridor development aid planned,**. p19 ... Nov 21
BRILL ENGINEERING CORP., NEW YORK, N.Y.
Purchased by King and Gavaris. p73 ... Nov 14
BROOKS, WAYNE T.
Chairman for task force on industry's problems. CW p11 ... Dec 12
New task force attacks labor problems,**. p169 .... Dec 19
BROWN, A. A.
On Pt. Pleasant Bridge collapse. RC p4 ... Sep 12
BROWN, COLON
Predicts 1969 housing surge. p96 ... Oct 17
BRUEHLER, GARY L.
On reduction of NAB union initiation fee in Atlanta. RC p6 ... Jul 4
BUDLONG & ASSOCIATES, LOS ANGELES, CALIF.
To merge with Quinton Engineers, Ltd. p73 ... Nov 14
BUILDING BLOCK MODULES, INC., OAKLAND, CALIF.
Easily lifted modules for low-cost housing,*. p26 ... Oct 10
BURGET, RUSSELL L.
Natural gas pipelines do not need federal regulation. RC p4 ... Sep 5

CANDEUB, FLEISSIG & ASSOC., NEWARK, N. J.
Planning consultant goes public. p73 ... Jul 25
CATERPILLAR TRACTOR CO., PEORIA, ILL.
Land clearing project in Malaysia. p20 ... Aug 22
CERNY, ROBERT G.
Architect's attack on liability confusion e p104 ... Jul 11

CHAFEE, JOHN
GOP quietly planks its platform,**. p9 ... Aug 8
CHEN, STANLEY
Ford grant promotes minority builders,**. p27 ... Jul 11
CHURCH, ARCHER
Antarctic constructors stress urban renewal,**. p64. .. Dec 19
CLARKE, H. R.
Dowsing in Bermuda. RC p16 ... Jul 11
CLIFFORD, CLARK
Antimissile system cleared for action,*. p12 ... Sep 12
COLLIN, A.L.
More on rebars. RC p4 ... Dec 5
COLLINS, G. R.
NCA asks labor to shape up. p81 ... Oct 24
COMMUNITY BUILDERS & DEVELOPERS INC., WASHINGTON, D.C.
New firm to promote minority participation in rebuilding the inner city. p21 ... Aug 22
COMPONOFORM, INC., CAMBRIDGE, MASS.
Structural framing for Trowbridge Apts,**. p22 .... Jul 4
COOPER, S. C.
Additional partner in Churchill Falls contract. RC p16 Oct 17
CORRADI, PETER
Merge outside the profession?**. p13 ... Jul 25
COTE, GAETEN J.
Systems building invades Canada,**. p30 ... Nov 7
CRANSTON, ALAN
Calif. homebuilder wins Senate seat,*. p18 ... Nov 14
CSAGOLY, PAUL F.
Try arch for Bridesburg-Delair Bridge, diag. RC p3 .. Oct 24
CZERWINSKI, RAYMOND V.
No need for more engineering societies. RC p8 ... Nov 7

DADIANY, KONSTANTINE
USSR dam draws top talent at top pay,**. Cover & p32 Oct 24
DAUGHERTY, I.
View of systems building in Europe. RC p16 ... Oct 17
DEBRO, JOSEPH
Ford grant promotes minority builders,**. p27 ... Jul 11
DEGELMAN, LARRY
The new computer world of MODCON, diag,**. p28. Jul 18
DENT, DONALD
More on Detroit's Phoenix housing project. RC p3... Oct 24
DEWIND, NORMAN
On Mekong project. RC p6 ... Oct 10
DILLINGHAM CORP., HONOLULU, HAWAII
To build oil refinery in Hawaii. CW p23 ... Jul 11
Acquires Simpson Construction Co. p101 ... Oct 17
DILLINGHAM, LOWELL S.
Dillingham deals from strength in Hawaii,**. Cover, p26 and p28 ... Sep 5
DINGELL, JOHN
One last stand against plastic pipe,**. p33 ... Aug 1
DONES, RAY
Ford grant promotes minority builders,**. p28 ... Jul 11
DOUGLAS, PAUL H.
One last stand against plastic pipe,**. p33 ... Aug 1
Defends public housing,*. p33 ... Nov 28
Douglas, Kaiser studies to be released Sunday. WO p13 Dec 12
Urban group sets another goal,*. p59 ... Dec 19
DOUGLAS, WALTER
Team approach sets pattern for road design,**. Cover and p27 ... Sep 12
DOWNS, ANTHONY
U.S. housing goal called beyond reach. p12 ... Dec 5
DUNN, WILLIAM E.
Contractors and owners confer on soaring costs. WO p27 ... Aug 29
AGC looks to election for change, help,*. p83 ... Oct 10
DUPONDT, PAUL
Low-cost building now in France-U.S. next,?** p34 . Jul 25
DVORJAK, ALLEN
Criticism of Dallas–Fort Worth terminal redesign. RC p6 ... Nov 21

EHRENKRANTZ, EZRA
URBS building system accepted,*. p17 ... Oct 24
ELIGATOR, MORTON H.
Structural engineers for Georgia-Pacific Bldg. RC p10 Oct 10
ESTES, SILAS
More on Detroit's Phoenix housing project. RC p3 .. Oct 24
EVANS, DANIEL J.
Election: some made it, some didn't,*. p18 ... Nov 14
EVANS, JOHN E.
New AFL–CIO attack on urban problems,*. p72 ... Oct 3
Model cities: safety's only one problem,**. p133 ... Nov 7
EWING, GEORGE M., JR.
On bids for Philadelphia Stadium. RC p16 ... Oct 17

FALLON, GEORGE H.
Innovation fills the highway bill,**. p31 ... Aug 1
FANNING, ROY L., JR.
George A. Fuller Co. contractor on Ala. aluminum mill job. RC p6 ... Aug 22
FELDMAN, MAURICE M.
Two named to New York City posts,**. p62 ... Jul 11
FINCH, ROBERT H.
Nixon picks pragmatic cabinet,**. p56 ... Dec 19
FLEMING, JOE W.
Appalachia road plan lacks cash,*. p28 ... Oct 17
FLING, RUSSELL S.
URBS: systems building analysis. RC p8 ... Aug 29
FOSCO, PETER
Laborers name Fosco president. p54 ... Dec 5
FOSHOLT, SANFORD K.
Correction on engineers for Lake Pontchartrain flood control barriers. RC p3 ... Sep 26
FOSTER WHEELER CORP, LIVINGSTON, N.J.
To merge with Frederick R. Harris, Inc., of NYC CW p7 Sep 12

FOX, ARTHUR J., JR.
USSR breaks records: earth and arch dams,**. Cover & p32 ... Oct 24
FOX, FRANCIS T.
Industry hires airport manager. p19 ... Oct 3
FREEMAN, GORDON M.
Resigns as IBEW head. p253 ... Sep 19
FUBINI, EUGENE G.
Urban Institute starts thinking,**. p13 ... Nov 21

GARDNER, JOHN
GOP quietly planks its platform,**. p9 ... Aug 8
GARVIN, JOHN C.
Cleveland: five–state group obtains management unity p100 ... Aug 29
Banks and insurance companies can help protect contractors' bargaining position. CW p13 ... Oct 24
Chamber of Commerce natl. conf. on rising costs. e p88 Oct 24
Challenges AGC on inflation. CW p11 ... Nov 14
Labor problems may find a cure,**. p31 ... Nov 28
GAYNOR, JAMES W.
Heads Nixon task force. WO p29 ... Nov 28
GENERAL MOTORS
Terex becomes trade name for earthmoving equipment. B p31 ... Oct 24
GIESE, R. J.
Correction on "Crane Pierces Cooling Tower." RC p8 Nov 7
GILVIN, L. P.
AGC looks to election for change, help,*. p83 ... Oct 10
GIURGOLA, ALDO
Resignation of designer of AIA hq. CW p11 ... Oct 3
GOODWIN, JAMES E.
Permafrost construction in Alaska. RC p38 ... Sep 19
GORHAM, WILLIAM
Urban Institute starts thinking,**. p13 ... Nov 21
GRANEY, J. M.
Chamber of Commerce natl. conf. on rising costs. e p88 Oct 24
Labor problems may find a cure,**. p31 ... Nov 28
GRAY, J. E.
On auction bidding. RC p6 ... Dec 12
GRAYMAN, ROBERT
On causes of Pt. Pleasant Bridge collapse. RC p16 ... Jul 11
GREEN, ERNEST
Model city labor accord for Boston,*. p12 ... Sep 5
GRIFFIN, C. W., JR.
On 17% vote for G. Wallace in ENR poll. RC p16 ... Nov 28
GROPIUS, WALTER
For component building. RC p8 ... Nov 7
GROSCURTH, ED J.
Kinzua Dam's "dual flow" development not new. RC p38 ... Sep 19
GRUBBS, JOHN
Reply to architect on "myopic engineer." RC p8 .... Aug 29

HAGGERTY, C. J.
Labor takes model cities lead,**. p74 ... Jul 25
New status symbol might help. p62 ... Sep 5
Urges action on three fronts,*. p253 ... Sep 19
HALPRIN, LAWRENCE
Cities don't have to be ugly,*. Cover and p53 ... Nov 7
Progress may threaten Virgin Islands. p12 ... Dec 5
HALVORSON, CARL M.
AGC looks to election for change, help,*. p83 ... Oct 10
Model cities: safety's only one problem,**. p133 ... Nov 7
HAMILL, M. R.
W. Va. State Road Commission defends its professional capabilities. RC p4 ... Jul 18
HANAHAM & JOHNSTON, NEW YORK, N.Y.
East coast's first all–Negro consulting engr. firm. p34 Jul 11
HANEY, PAUL D.
Manpower is pollution control's big problem,**. Cover, p24 and e p76 ... Sep 26
HANSBERGER, ROBERT V.
Housing builds Boise Cascade,**. Cover and p28 .... Dec 12
HARNISCHFEGER, HENRY
Testimonial to steel. RC p6 ... Aug 22
HARRIS, FREDERICK R., INC., NEW YORK, N.Y.
To merge with Foster Wheeler Corp. of Livingston, N.J. CW p7 ... Sep 12
HAYDON, BROWNLEE
No parapsychology lab at Rand Corp. RC p10 ... Oct 10
HEALY, JOHN E., II
AGC looks to election for change, help,*. p83 ... Oct 10
HELLER, WALTER W.
Lack of credit perils housing,**. p53 ... Oct 31
HELLMUTH, GEORGE
Architects' first goal: To stay in the running,**. p26. Jul 4
HERMAN, BRUCE A.
Team approach sets pattern for road design,**. Cover and p27 ... Sep 12
HERTZ EQUIPMENT RENTAL CORP., ATLANTA, GA.
Rents out tower crane for S.C. job,*. p31 ... Jul 11
HICKEL, WALTER J.
Nixon picks pragmatic cabinet,**. p56 ... Dec 19
HILL, HERBERT
NAACP girds for model cities showdown,*. p54 .... Jul 4
HOAD, JOHN G.
Correction of Top 500 design firm listing. RC p8 .... Jul 4
HUMPHREY, HUBERT H.
Platforms draw the battle lines,**. p11 ... Sep 5
Positions emerge from campaign,**. p11 ... Oct 31

IMPREGILO, MILAN, ITALY
Lands Argentina's Chocon Dam, map. p16 ... Oct 31
INTERNATIONAL TELEPHONE & TELEGRAPH CORP.
To build $40–m Toronto project. CW p7 ... Jul 18

JAPAN DEVELOPMENT & CONSTRUCTION CO., LTD., TOKYO, JAPAN
Bulldozer grades under water,*. p22 ... Nov 14

JOHNSON, A. E.
AASHO lashes new road rules,**. p15 ..... Dec 12
JOHNSON, ERIC W.
On using compressed air for pumped storage RC p6 .. Oct 10
JOHNSON, WENDELL E.
USSR breaks records: earth and arch dams,**. Cover & p32 ..... Oct 24

KAISER, EDGAR F.
Heads National Housing Partnership. WO p9 ..... Sep 12
Housing angels wait in wings. p79 ..... Sep 19
Housing studies out; Kaiser report delayed. WO p17 . Oct 10
Construction process small part of total housing costs. e p76 ..... Nov 21
Kaiser housing report awaits Nixon takeover. WO p9 . Dec 5
Douglas, Kaiser studies to be released Sunday. WO p13 Dec 12
KAISER ENGINEERS
Kaiser wins the In-City contest. p13 ..... Jul 4
and e p104 ..... Jul 11
KASSABAUM, GEORGE E.
Architects' first goal: to stay in the running,**. Cover, p26 & e p68 ..... Jul 4
HUD warns black separatists,*. p19 ..... Oct 24
KEARNEY, JOSEPH S.
"Unions Winning Blue Chip Raises" – a one-sided story. RC p6 ..... Aug 22
KEARNS, ROBERT W.
More on Detroit's Phoenix housing projects. RC p3 .. Oct 24
KIDDE, WALTER CONSTRUCTORS, INC.
Hires J. C. Warnecke for new airport design team. Bp23 Oct 31
KING AND GAVARIS, NEW YORK, N.Y.
Has purchased Brill Engineering Corp. p73 ..... Nov 14
KIRKMAN, HUGH B.
Stacked mobile homes present substantial fire load. RC p6 ..... Jul 25
KNABE, M.C.
On unions as "robber barons". RC p6 ..... Aug 22
KOMENDANT, A. E.
Reply to architect on "myopic engineer". RC p4 .... Sep 5
On design for Bridesburg-Delair Bridge. RC p6 ..... Nov 14
KOTALIK, B. F.
Correction on "Viaduct Builder Defies Monster of the Swamp." RC p8 ..... Nov 7
KRAMRISCH, FRITZ
More on Detroit's Phoenix housing project. RC p3 .. Oct 24
KRELL, WILLIAM
More on Detroit's Phoenix housing project. RC p3 .. Oct 24
KROMER, LEON B., JR.
The industry heads for suicide,*. p49 ..... Aug 22
and RC p3 ..... Sep 26
Is building industry as it now exists on the way out? e p112 ..... Aug 29
Labor problems may find a cure,**. p31 ..... Nov 28
KROYER, KARL, CO., THISTED, DENMARK
Runways test synthetic aggregate, Sinopal,*. p51 ... Nov 7

LAIRD, MELVIN R.
Nixon picks pragmatic cabinet,**. p57 ..... Dec 19
LEE, DONOVAN H.
Causes of brittle fracture. RC p4 ..... Aug 15
On review of Standard Hdbk for Civil Engineers, ed. by F. S. Merritt. RC p4 ..... Oct 31
LEE, FREDERICK A.
The myopic engineer. RC p16 ..... Jul 11
LINCOLN, WALTER S.
Systems building overrated, no cheaper than standard units. RC p6 ..... Oct 3
LOCHARY, JOHN P.
Open shop group urges labor changes,*. p81 ..... Oct 24
LYFORD, F. E.
In Michigan control of practicing corporation must be in hands of licensed professionals. RC p6 ..... Aug 22

MANSFIELD, MIKE
Money bills passage assured,**. p11 ..... Sep 12
MARCUS, JAMES L.
Indictment of 14 construction firms linked to Marcus investigation. p105 ..... Aug 29
MARTIN, F. RAY
N. D.'s KTHI tv tower world's tallest structure. RC p4 Sep 12
MAST, FRED W.
AGC national conference will air seasonal unemployment. CW p25 ..... Aug 29
AGC looks to election for change, help,*. p83 ..... Oct 10
Seasonality begins to get a big play,*. p54 ..... Oct 31
MASTERS, FRANK M., JR.
On designer for proposed Bridesburg-Delair Bridge. RC p3 ..... Sep 26
MATTHEWS, DONALD A.
Named coordinator of Pittsburgh's Regional Congress of Construction Employers. p58 ..... Nov 21
MAYER, ALBERT
All need a better environment,*. p15 ..... Nov 21
McGRATH, SYDNEY L.
Minority engineers. RC p4 ..... Jul 18
MCNAMARA, ROBERT S.
First speech as president of World Bank. e p100 .... Oct 10
Urban Institute starts thinking,**. p13 ..... Nov 21
McNULTY, ALFRED P.
Parameter estimate guides costs,**. p110 ..... Dec 19
McNUTT, GEORGE C.
City rebuilding costs less when done by local gov't. RC p8 ..... Aug 29
MEANY, GEORGE
GOP quietly planks its platform,**. p9 ..... Aug 8
Democrats nail down a platform,**. p29 ..... Aug 29
MENZI, ERNST AG, WIDNAU, SWITZERLAND
Swiss backhoe digs anywhere, any way,**. p22 ..... Nov 14
MERRILL, EDWARD A.
Need for team effort by all design professionals. RC p6 Oct 10
MERRITT, FREDERICK S.
Planning a handbook..RC p16 ..... Nov 28
MIDWEST APPLIED SCIENCE CORP., WEST LAFAYETTE, IND.
Extruded foamed plastic builds a house, diags. p22 .. Jul 18

MIKLE, JOHN
More on Detroit's Phoenix housing project. RC p3 .. Oct 24
MILLER, A.
Urban Institute starts thinking,**. p13 ..... Nov 21
MILLER, BURTON F.
ARBA joins AASHO stand, warns of state pullouts. p17 Dec 12
MILLER, CHARLES L.
Heads Nixon task force. WO p29 ..... Nov 28
MILLER, J. I.
Urban Institute starts thinking,**. p13 ..... Nov 21
MILLS, WILBUR D.
Surcharge extension possible next year. WO p15 .... Oct 24
MITCHELL, RICHARD J.
CIJC: AGC resigns, new head named,*. p85 ..... Jul 18
MITCHELL, W.H.
Reply to architect on "myopic engineer". RC p16 ... Aug 1
MOELLER, GRISWOLD L.
Two named to New York City posts,**. p62 ..... Jul 11
MOORE, C.A.
Will manage airports. p91 ..... Nov 7
MOORE, JOE G., JR.
Moore togetherness for pollution abatement,**. p30 . Nov 21
MORRIS, WILLIAM
Blacks organize for contracts,*. p17 ..... Dec 12
MORTON, JOHN O.
Professionalism is key to highway success,**. Cover & p24 ..... Jul 25
MOSES, STEPHEN D.
Housing builds Boise Cascade,**. Cover and p28 .... Dec 12
MOYNIHAN, DANIEL PATRICK
Nixon picks pragmatic cabinet,**. p57 ..... Dec 19
MURPHY, THOMAS
The industry wrestles with seasonality,**. p71 ..... Nov 14
MUSKIE, EDMUND S.
Democratic gain means pollution control loss. WO p9 and p12 ..... Sep 5
Money bills passage assured,**. p11 ..... Sep 12
Nixon may benefit construction,**. p16 ..... Nov 14
NAUMANN, W. E.
The industry wrestles with seasonality,**. p71 ..... Nov 14
NELSON, SAMUEL B.
Public works director in Calif. resigns. p94 ..... Sep 19
NEWNAM, FRANK H., JR.
ASCE'S 100th president,**. Cover and p31 ..... Oct 10
NIXON, RICHARD M.
Platforms draw the battle lines,**. p11 ..... Sep 5
Positions emerge from campaign,**. p11 ..... Oct 31
Nixon may benefit construction,**. p15 ..... Nov 14
Will need strong administration. Cover and e p62 .... Nov 14

OBATA, GYO
Architects' first goal: to stay in the running,**. p26 . Jul 4
OLDS, RICHARD J.
Manhattan surges skyward,**. p82 ..... Nov 28
O'SULLIVAN, TERENCE J.,
Laborers name O'Sullivan sec'y.-treasurer. p54 ..... Dec 5
OWINGS, NATHANIEL
Team approach sets pattern for road design,**. Cover and p27 ..... Sep 12

PATMAN, WRIGHT
Big housing bill is nearly home,**. p11 ..... Jul 18
Wants probe of bank-corporate ties. WO p27 ..... Aug 29
PATON, ANDREW C.
Merge outside the profession,?**. p13 ..... Jul 25
PAVLO, LIONEL
Active bridge designer takes the initiative,**. Cover & p44 ..... Aug 29
PERRY, DONALD G.
Office of Foreign Direct Investment report not imminent. RC p38 ..... Sep 19
PFERRER, D. L.
Need for national engineering society. RC p6 ..... Dec 12
PICASSO, PABLO
Picasso's prestressed sculpture,**. p20 ..... Aug 8
PIKARSKY, MILTON
Merge outside the profession,?**. p13 ..... Jul 25
PILLARD, CHARLES H.
Takes over as IBEW head. p253 ..... Sep 19
PLANNING RESEARCH CORP., LOS ANGELES, CALIF.
Increases its wholly owned subsidiaries to six. p73 ... Nov 14
PLOFKER, LEO
Manhattan surges skyward,**. p82 ..... Nov 28
POST, JOHN
New task force attacks labor problems,**. p189 .... Dec 19
POTOMAC ELECTRIC POWER CO., WASHINGTON, D.C.
Beards and "provocative" women's clothing prohibited. B p38 ..... Aug 29
POWELL, GEORGE D.
On dowsing and parapsychology. RC p4 ..... Sep 5
PRESTON, E. S.
Appalachia road plan lacks cash,*. p28 ..... Oct 17

QUINTON ENGINEERS, LTD., LOS ANGELES, CALIF.
To merge with Budlong & Associates. p73 ..... Nov 14

RANDOLPH, JENNINGS
Innovation fills the highway bill,**. p31 ..... Aug 1
Nixon may benefit construction,**. p17 ..... Nov 14
AASHO lashes new road rules,**. p15 ..... Dec 12
RAY, FREDERICK C.
Correction of "Plastic Pipe Okayed." RC p8 ..... Aug 29
RETTERER, L.W.
Plumbers have set the pace on the road to industry's "suicide". RC p3 ..... Sep 26
Ban national agreements. RC p6 ..... Oct 3
REUTTER, JOHN G.
Merge outside the profession,?**. p13 ..... Jul 25
RICHARDS, SY
On "URBS Building System Accepted." RC p8 ..... Nov 7
RITTER, LEO J., JR.
ENR senior editor dies,*. p13 and e p84 ..... Sep 5

ROBINSON, W. J.
More on Detroit's Phoenix housing project. RC p3 .. Oct 24
ROE, KENNETH A.
Burns and Roe, Inc. also worked on Pan Am's Kennedy Int'l Airport maintenance base. RC p8 ..... Aug 29
ROGERS, JOHN W.
Unions' tax-fee pension funds should be used for apprenticeship programs. RC p8 ..... Nov 7
ROGERS, THOMAS F.
Rogers brings the space age to HUD,*. p14 ..... Jul 4
Embrace systems or be replaced,*. p15 ..... Oct 3
Instant city expert builds against all odds,*. Cover and p36 ..... Oct 17
ROMNEY, GEORGE W.
Nixon picks pragmatic cabinet,**. p56 ..... Dec 19
RONAN, WILLIAM J.
NY's MTA chairman gets $70,000 per year. p24 .... Jul 18
ROTH, RICHARD, JR.
Manhattan surges skyward,**. p82 ..... Nov 28
ROTHENSTEIN, GUY G.
URBS: systems building analysis. RC p8 ..... Aug 29
NYU's loadbearing precast reinforced concrete panels are not NYC's first. RC p6 ..... Oct 3
ROUSE, JAMES W.
Columbia: American dream in one big package, map,**. Cover and p26 ..... Nov 21
ROY, ROBERT H.
New national engineering society? e p116 ..... Oct 17
RYAN, JOHN ED
Early tests to win bldg dept approval could have expedited Detroit's Project Phoenix. RC p6 ..... Oct 3
RYAN, WILLIAM F.
House committee for enforcing equal opportunity. CW p11 ..... Dec 12

SAFDIE, MOSHE
Habitat Puerto Rico cuts cost by 80%,**. p15 ..... Jul 18
Housing experiments show high initial cost,**. p24 .. Nov 21
SAMUELS, HOWARD J.
Democrats nail down a platform**. p29 ..... Aug 29
Minority builders get national aid,*. p16 ..... Nov 21
SARDIS, JOHN
URBS costs questioned. RC p16 ..... Nov 28
SAWYER, HERBERT A., JR.
For auction bidding. RC p4 ..... Oct 31
SCARLETT, A. M.
Dowsing an occult activity. RC p4 ..... Aug 15
SCHAEFER, VINCENT
Project skywater: when it pours, it rains,**, p37 .... Sep 5
SCHNURER, JOSEPH
On adoption of metric system. RC p4 ..... Oct 31
SCHRAMM, INC'.
Blind gopher is neat, quick and true,**. p22 ..... Sep 5
SCHULTZE, CHARLES L.
Urban Institute starts thinking,**. p13 ..... Nov 21
SEELEY, GEORGE B.
Correction on map of Rio de la Plata basin projects. RC p6 ..... Jul 4
SHAPIRO, MURRAY
Manhattan surges skyward,**. p82 ..... Nov 28
SHARPE, ROLAND L.
Minority training program in one San Fran firm. RC p16 ..... Aug 1
SHILSTONE, JAMES M.
Arbeton process is not an outgrowth of Norway's Naturbetong. RC p4 ..... Oct 31
SHULTZ, GEORGE P.
Heads Nixon task force. WO p29 ..... Nov 28
Nixon picks pragmatic cabinet,**. p57 ..... Dec 19
SIMPSON CONSTRUCTION CO., LOS ANGELES, CALIF.
Acquired by Dillingham Corp. p101 ..... Oct 17
SITTON, PAUL L.
Anniversary finds DOT plugging cautiously,**. p13 .. Aug 8
SMITH, R. G.
Welding rebars. RC p6 ..... Nov 21
SMITH, ROBERT L.
Reasons for more selective bidding and higher bid prices. RC p3 ..... Sep 26
SMITH, WILBUR
Team approach sets pattern for road design,**. Cover and p27 ..... Sep 12
SPARKMAN, JOHN
Big housing bill is nearly home,**. p11 ..... Jul 18
SPEEDSPACE CORP., SANTA ROSA, CALIF.
Lift a folded slab, drop a building,*. p22 ..... Jul 25
STAFF, C. E.
On floating sewage lagoon cover. RC p6 ..... Nov 14
STAPP, ROSS G.
AASHO head looks to innovation,*. p16 ..... Dec 12
STIRLING HOMEX CORP., AVON, N.Y.
Rochester townhouse modules go up in three hours,**. p17 ..... Aug 22
SWEET, CLYDE E., JR.
No rail transit plans at present in St. Louis. RC p6 ... Nov 14
SWIBEL, CHARLES R.
Low-cost housing has its day,*. p47 ..... Aug 22
SZMAK, G.
On adoption of metric system. RC p10 ..... Oct 10

TATE, JAMES
Democrats nail down a platform**. p29 ..... Aug 29
TAYLOR, H. RALPH
HUD warns black separatists,*. p19 ..... Oct 24
TISHMAN REALTY & CONSTRUCTION CO., INC. NEW YORK, N.Y.
Consultant to assist in new terminal at Newark Airport. p21 ..... Jul 25
TULLER, J. D.
On Mekong project. RC p6 ..... Oct 10
TURK, A. R.
Engineer's role in systems building. RC p6 ..... Dec 12
TURNER, FRANK C.
Corridor development aid planned,**. p19 ..... Nov 21

UDALL, STEWART L.
Interior Dept. reorganizes. p35 and e p156 ..... Nov 7
U. S. STEEL CORP.
Defers increase on Buttweld pipe until '69. p141 .... Nov 7
URIS, HAROLD
Manhattan surges skyward,**. p82 ..... Nov 28
UTAH CONSTRUCTION & MINING CO.
Mole makes monkey of mountain,*. p19 ..... Dec 12

VERINK, GENE
On Mekong project. RC p6 ..... Oct 10
VOLPE, JOHN A.
Nixon picks pragmatic cabinet,**. p56 ..... Dec 19
VOORHEES, ALAN M.
Vanguard planner now plays gadfly,*. Cover and p25 Oct 31

WAHLER, W. A.
On "Engineers Ask Foreign Aid Increase." RC p4 .. Dec 5
WALLACE, GEORGE
Positions emerge from campaign,**. p11 ..... Oct 31
WARNECKE, JOHN CARL
Hired by W. Kidde for new airport design team. B p23 Oct 31
WATSON, PHILIP E.
Calif bond-sale halt is threatened. p56 ..... Aug 15
Ban-the-bond idea jars California,*. p56 ..... Sep 12
Counterattack to Watson Amendment. CW p75 ..... Sep 19
Quick sale of bond anticipation notes prompted by Watson Amendment. CW p11 ..... Oct 3
Premature municipal bond offerings in response to Watson Amendment. CW p15 ..... Oct 10
Watson Amendment defeated. p61 ..... Nov 21
WEAVER, ROBERT C.
Labor takes model cities lead,**. p74 ..... Jul 25
Nominees for partnership to tap private money for ghetto housing. CW p9 ..... Aug 22
Democrats nail down a platform,**. p29 ..... Aug 29
Lack of credit perils housing,**. p53 ..... Oct 31
WEBB, JAMES
Money bills passage assured,**. p12 ..... Sep 12
WEESE, JOHN
Team approach sets pattern for road design,**. Cover and p27 ..... Sep 12
WEINBERGER, LEON
Another top man leaves FWPCA. p16 ..... Jul 25
WEINER, LEON
Predicts rise in housing starts. CW p75 ..... Sep 19
WHEATON, GEORGE S.
Dillingham deals from strength in Hawaii,**. p28 .... Sep 5
WHITE, ROBERT E.
Special grout mixing for Picasso sculpture RC p38 .... Sep 19
WHITEMAN MANUFACTURING CO., LOS ANGELES, CALIF.
Whiteman P-80 is concrete pump used for record pumping job in Indianapolis. RC p6 ..... Dec 12
WILLIAMS, GORDON L.
On adoption of metric system. RC p4 ..... Oct 31
WINKLER, JACK
USSR breaks records: earth and arch dams,**. Cover & p32 ..... Oct 24
WRIGHT, JAMES
AASHO lashes new road rules,**. p15 ..... Dec 12

YOUNG, WHITNEY M., JR.
Architects hear it like it is,*. p16 ..... Jul 4
Urban Institute starts thinking,**. p13 ..... Nov 21

Part III

PRODUCT MANUFACTURERS

ACE INDUSTRIAL PRODUCTS, CEDAR RAPIDS, IOWA
Portable gas heater. B p187 ..... Sep 19
AEROIL PRODUCTS CO., SOUTH HACKENSACK, NEW JERSEY
Aluminum lute. B p58 ..... Aug 1
Central heater. B p43 ..... Aug 15
AGA CORP., SECAUCUS, NEW JERSEY
Transit measures distance, too. p44 ..... Jul 18
AIC CORP., HOUSTON, TEXAS
Pipeline welding. B p37 ..... Oct 31
AIR-FLO MFG. CO.,INC., PRATTSBURGH, NEW YORK
Material spreader*. B p42 ..... Nov 14
ALLEGHENY LUDLUM STEEL CORP., PITTSBURGH, PA.
Mini hammer,*. B p42 ..... Nov 14
ALLIED STEEL & TRACTOR PRODUCTS, INC., CLEVELAND, OHIO
Pile driver-soil compactor,*. B p61 ..... Oct 17
ALLIS-CHALMERS, MILWAUKEE, WIS.
Crawler improved. B p53 ..... Aug 1
Power plant. B p40 ..... Nov 14
ALRO PLUMBING, SPECIALITY CO., INC., BROOKLYN, N.Y.
Pipe fittings. B p56 ..... Jul 11
ALTEC LANSING DIV., ANAHEIM, CALIF.
Power equation calculator. B p53 ..... Oct 10
AMERICAN AIR FILTER CO., INC., LOUISVILLE, KY.
No-bounce tamper,*. B p53 ..... Oct 10
AMERICAN BOWSER CORP., AURORA, ILL.
Sludge control. B p61 ..... Oct 17
AMERICAN HOIST & DERRICK CO., ST. PAUL, MINN.
Hydraulics backhoes. B p86 ..... Nov 7
Compactor is three-in-one unit,*. p91 ..... Nov 28
AMERICAN PIPE TOOL CO., CHICAGO, ILL.
Pipe threader,*. B p60 ..... Aug 29
AMERICAN POCLAIN CORP., RAHWAY, N. J.
Clamshell. B p60 ..... Jul 11
Hydraulic excavator,*. B p41 ..... Nov 21
AMERICAN TRACTOR EQUIPMENT CORP., OAKLAND, CALIF.
Hydraulic ripper. B p58 ..... Jul 11
Hydraulic ripper,*. B p37 ..... Aug 22
Hydraulic ripper,*. B p188 ..... Sep 19
Parallel ripper,*. B p54 ..... Oct 10
Rock ripper. B p40 ..... Nov 14
AMERICAN WATER BLASTER CO., HOUSTON, TEX.
Water blaster. B 58 ..... Aug 1
AMETEK INC., EAST MOLINE, ILL.
Sand filter. B p36 ..... Aug 8
APPLIED POWER INDUSTRIES, INC., BUTLER, WIS.
Hydraulic pump. B p45 ..... Dec 12
ARCOS CORP., PHILADELPHIA, PA.
Automatic welder. B p54 ..... Oct 17
Fine wire welder,*. B p58 ..... Aug 1
ARMCO STEEL CORP., MIDDLETOWN, OHIO
Welded corrugated pipe. B p53 ..... Oct 10
ARROW MANUFACTURING CO., DENVER, COLO.
Machine for driving posts said to give cost savings. p40 Nov 14
ATHEY PRODUCTS CORP., RALEIGH, N. C.
Over-cab conveyor,*. B p37 ..... Aug 22
AUTOMATIC POWER, INC., HOUSTON, TEX.
Primary battery. B p45 ..... Dec 12
AYERST LABORATORIES, NEW YORK, N. Y.
Skin protection. B p195 ..... Sep 19

BALDERSON, INC., WAMEGO, KAN.
10-yd. bucket,*. B p44 ..... Nov 14
BALDWIN-LIMA-HAMILTON CORP., AURORA, ILL.
Grader. B p61 ..... Oct 17
BALDWIN-LIMA-HAMILTON CORP., LIMA, OHIO
Crane can be fitted as backhoe,*. p56 ..... Jul 11
Versatile truck cranes have extra long reach,*. p42 .. Aug 15
BALTIMORE AIRCOIL CO., INC., BALTIMORE, MD.
Cooling towers. B p45 ..... Dec 12
BARBER-GREENE CO., MILWAUKEE, WIS.
Fine crusher,*. B p49 ..... Oct 3
BEAIRD-POULAN, INC., SHREVEPORT, LA.
Power saw. B p60 ..... Aug 29
BERKO ELECTRIC MFG. CORP., MICHIGAN CITY, IND.
Heating panel. B p44 ..... Oct 3
BISON INSTRUMENTS, INC., MINNEAPOLIS, MINN.
Resistivity systems. B p56 ..... Aug 1
BLACKWELL BURNER CO., SAN ANTONIO, TEX.
Joint sealer. B p41 ..... Sep 26
BLAW-KNOX CO., PITTSBURGH, PA.
Automatic hook,*. B p194 ..... Sep 19
BLUM, JULIUS & CO., CARLSTADT, N.J.
Pipe railing. B p44 ..... Oct 3
BLU-RAY, INC., ESSEX, CONN.
Copier. B p32 ..... Aug 22
BOBEN EQUIPMENT SERVICES LTD., THORNHILL, ONT., CANADA
Diesel generators. B p94 ..... Nov 28
BORG-WARNER CORP., ROCKFORD, ILL.
Torque converters. B p44 ..... Nov 14
BORG-WARNER CORP., WASHINGTON, W. VA.
Markers. B p86 ..... Nov 7
BOWMAN PRODUCTS DIV., CLEVELAND, OHIO
Spray coating. B p36 ..... Dec 5
BRISTOL PNEUMATIC TOOLS LTD., MIDDLETOWN, N. Y.
Air compressors. B p36 ..... Dec 5
BUCYRUS-ERIE CO., SOUTH MILWAUKEE, WIS.
Hydraulic cranes proliferate,*. p54 ..... Jul 11
Winches. B p56 ..... Aug 1
BURKE CONCRETE ACCESSORIES, INC., BURLINGAME, CALIF.
Concrete tremie. B p61 ..... Oct 17
BURNER, RAY CO., SAN FRANCISCO, CALIF.
Waste burner. B p42 ..... Nov 14

CAMBRIDGE WIRE CLOTH CO., CAMBRIDGE, MD.
Anchor system simplifies underwater pipeline jobs p53 Jul 18
CANON U.S.A., INC., WOODSIDE, N. Y.
Improved calculator goes step beyond transistors. p184 Sep 19
CAPITAL ENGINEERING CO., MINNEAPOLIS, MINN.
Telescoping tremie speeds deep concreting projects. p187 ..... Sep 19
CAREY, PHILIP CORP., CINCINNATI, OHIO
Asbestos underlayment. B p40 ..... Jul 25
CASE, J.I. CO., RACINE, WIS.
Dual hydraulics control backhoe,*. p36 ..... Dec 5
CATERPILLAR TRACTOR CO., PEORIA, ILL.
Diesel engines. B p40 ..... Jul 25
Wheel loader. B p56 ..... Aug 1
Grader power. B p64 ..... Aug 1
Bulldozer. B p43 ..... Aug 15
Improved loader. B p32 ..... Aug 22
Grader engine. B p59 ..... Aug 29
Bulldozer,*. B p37 ..... Oct 31
CELOTEX CORP., TAMPA, FLA.
Urethane board. B p54 ..... Aug 29
Sound insulation. B p43 ..... Nov 14
Acoustical panel. B p36 ..... Dec 5
CF&I STEEL, DENVER, COLO.
Prestressing. B p42 ..... Nov 21
CHALFANT PRODUCTS CO., INC., CLEVELAND, OHIO
Cable trays. B p64 ..... Oct 10
CHALLENGE-COOK BROS., INC., INDUSTRY, CALIF.
Concrete pump. B p42 ..... Nov 14
Haulers. B p49 ..... Nov 14
CHAMPION HEATER CO., St. LOUIS, MO.
Portable heater,*. B p44 ..... Nov 14
CHAMPION MFG. CO., ST. LOUIS, MO.
Soil compactor. B p195 ..... Sep 19
Saw blades. B p41 ..... Nov 21
CHARLES MACHINE WORKS INC., PERRY, OKLA.
Crumbing attachment. B p41 ..... Sep 26
CLASSIC MANUFACTURING, INC., STURGIS, MICH.
Trailer pulled by pickup truck,*. p85 ..... Nov 7
CLEVELAND VIBRATOR CO., CLEVELAND, OHIO
Car shaker. B p56 ..... Aug 1
Vibrator,*. B p43 ..... Nov 14
COLLINS ASSOCIATES, INC., CINCINNATI, OHIO
Conversion hoist. B p58 ..... Aug 1
CONCUT, CHICAGO, ILL.
Concrete saws. B p190 ..... Sep 19
CONCUT, EL MONTE, CALIF.
Concrete saw,*. B p64 ..... Aug 1
CONSOLIDATED DEVELOPMENT LABORATORIES, INC., CAMBRIDGE, MASS.
Storage unit. B p40 ..... Jul 25
CONSTRUCTION MACHINERY, INC., OKLAHOMA CITY, OKLA.
Single-lane paver,*. B p190 ..... Sep 19
Mesh depressor. B p86 ..... Nov 7
CONSTRUCTION RESEARCH CORP., CHICAGO, ILL.
Mortar additive. B p40 ..... Jul 25
COOPER-STANLEY CO. INC., ARLINGTON, TEX.
Claw blades,*. B p62 ..... Aug 1
Power bucket,*. B p36 ..... Aug 8
Grab attachment. B p44 ..... Nov 14
CRS-CROSE INTERNATIONAL, INC., Houston, TEX.
Pipe cradle,*. B p60 ..... Aug 29
CURBMASTER OF AMERICA INC., CEDAR FALLS, IOWA
Rig spreads and finishes concrete for pavements. p43 Aug 15
THE CUSTANITE CORP., BROOKLYN, N. Y.
Tape ruler. B p54 ..... Oct 10
DAVIS MFG., INC., WICHITA, KAN.
Trencher,*. B p43 ..... Nov 21
DEERE, JOHN, MOLINE, ILL.
Backhoes. B p49 ..... Nov 14
DRAVO CORP., PITTSBURGH, PA.
Sewage treatment plant. B p61 ..... Oct 17
DROTT MANUFACTURING CO., WAUSAU, WIS.
Hydraulic excavator. B p58 ..... Jul 11
Hydraulic crane. B p56 ..... Aug 1
DYNATEK INDUSTRIES INC., WOODBRIDGE, N. J.
Oil rectifier. B p56 ..... Aug 1

EAGLE IRON WORKS, DES MOINES, IOWA
Headache balls. B p43 ..... Aug 15
EATON YALE & TOWNE INC., CLEVELAND, OHIO
Articulated loader,*. B p54 ..... Oct 10
ELGIN SOFTENER, INC., ELGIN, ILL.
Solids contract reactor. B p49 ..... Nov 14
ELLICOTT MACHINE CORP., BALTIMORE, MD.
Portable dredge,*. B p49 ..... Oct 3
ELY ENTERPRISES, INC., FRESNO, CALIF.
Crane safety stop. B p49 ..... Oct 3
EMERSON ELECTRIC CO., HATFIELD, PA.
Water meter. B p45 ..... Dec 12
EPIC, INC., NEW YORK, N. Y.
Water level gage. B p56 ..... Jul 11
EPIC METALS CORP., PITTSBURGH, PA.
Steel roof deck. B p86 ..... Nov 7
ESB INC., READING, PA.
Head protection. B p37 ..... Aug 22

FAIRBANKS MORSE, KANSAS CITY, KAN.
Sewage pump. B p45 ..... Dec 12
FERREX-JAHN, INC., NEW YORK, N. Y.
Stump cutter. B p37 ..... Aug 22
FIRESTONE TIRE & RUBBER CO., AKRON, OHIO
Portable scale. B p42 ..... Nov 14

FISCHER & PORTER CO., WARMINSTER, PA.
Chlorinator. B p49 ... Nov 14
FLECO CORP., JACKSONVILLE, FLA.
Clearing rake,*. B p56 ... Aug 1
FLUOR PRODUCTS CO., SANTA ROSA, CALIF.
Cooling tower,*. B p58 ... Aug 1
FLYGT CORP., STAMFORD, CONN.
Dewatering pumps,*. B p56 ... Aug 1
Lift station allows dry repair,*. p40 ... Nov 14
Trash pump. B 36 ... Dec 5
FMC CORP., HOMER CITY, PA.
Vibrator. B p36 ... Dec 5
FORD MOTOR CO., BIRMINGHAM, MICH.
Ford upgrades its light tractors,*. p36 ... Aug 8
FOXBORO CO., FOXBORO, MASS.
Filter console. B p54 ... Oct 17
FRITZ CHEMICAL CO., DALLAS, TEX.
Wall tile,*. B p37 ... Aug 22

GENERAL ELECTRIC CO., WATERFORD, N. Y.
Sealant. B p42 ... Nov 21
GENERAL ELECTRIC COMMUNICATION PRODUCTS DEPT., LYNBURG, VA.
Two-way radio units use new frequency bands. p185 ... Sep 19
GENERAL MOTORS CORP., DETROIT, MICH.
Trucks. B p49 ... Nov 14
GENTRAN, INC., SANTA CLARA, CALIF.
Force indicator. B p53 ... Oct 10
Transducer. B p61 ... Oct 17
GEORGIA-PACIFIC, PORTLAND, ORE.
Glass sheathing. B p32 ... Aug 22
GEOSCIENCE INSTRUMENT CORP., MOUNT VERNON, N. Y.
Laboratory crusher. B p58 ... Jul 11
GERIN CORP. THE, AVON, N. J.
Oil indicator. B p92 ... Nov 28
GILSON SCREEN CO., MALINTA, OHIO
Aggregate test balances. B p44 ... Oct 3
GLASS REINFORCED ENGINEERED MATERIALS DIV., LIVERMORE, CALIF.
Safety ladder. B p54 ... Aug 29
GOBLE, GENE W. & ASSOCIATES, INC., ESCONDIDO, CALIF.
Highway signal. B p44 ... Nov 14
GRANDSTAND SCAFFOLD CORP., BIRMINGHAM, MICH.
Portable catwalk. B p60 ... Jul 11
GRIFFOLYN CO., INC., HOUSTON, TEX.
Roll out plastic bridge,*. p44 ... Jul 18
GROSS, A. GMBH, WEST GERMANY
Crane can walk and adjust to terrain, drawing,*. p85 . Nov 7
GULF GENERAL ATOMIC, INC., SAN DIEGO, CAL.
Sets up advisory service on nuclear explosives. B p35 . Oct 17
Portable unit purifies water,*. p86 ... Nov 7
GURLEY, W. & L. E. TROY, N. Y.
Lasers just right for surveys,*. p54 ... Aug 29

HAMILTON MFG. CO., TWO RIVERS, WIS.
Light table,*. B p195 ... Sep 19
HANSLER SAW INC., WATERTOWN, N. Y.
Metals saw. B p62 ... Oct 3
HARNISCHFEGER CORP., MILWAUKEE, WIS.
Welders. B p60 ... Jul 11
Crawler widens hydraulically,*. p40 ... Jul 25
HASTINGS DYNAMOLD CORP., HASTINGS, NEB.
Prestressed concrete slipformer. B p40 ... Jul 25
HEITZ, KARL INC., NEW YORK, N. Y.
Dictater designed for field fits in the palm of the hand,*. p36 ... Nov 21
HELTZEL STEEL FORM & IRON CO., WARREN, OHIO
Mobile concrete plant erects self,*. p40 ... Nov 14
HEWLETT PACKARD, PALO ALTO, CALIF.
Computer time-shared system. B p44 ... Oct 3
HICKMAN, W. P. CO., TROY, MICH.
Fascia panel system,*. B p37 ... Oct 31
HIGHWAY EQUIPMENT CO., CEDAR RAPIDS, IOWA
Spreader. B p36 ... Dec 5
HOLLINGER ASSOCIATES, XENIA, OHIO
Electrical rig handles concrete paving jobs. p48 ... Jul 18
HOMELITE, PORT CHESTER, N. Y.
Steel and stone saw. B p54 ... Aug 29
HONEYWELL APARATUS CONTROLS DIV., MINNEAPOLIS, MINN.
Temperature controllers. B p54 ... Aug 29
HUBER CORP., MARION, OHIO
Tandem rollers. B p58 ... Jul 11
Mobile sealcoat applicator renews asphalt surfaces,*. p186 ... Sep 19
HUGHES TOOL CO., HOUSTON, TEX.
Utility pole digger. B p187 ... Sep 19
HUMPHREYS CORP., CONCORD, N. H.
High-pressure burners. B p54 ... Oct 10
HYSTER CO., KEWANEE, ILL.
Pneumatic roller does any compaction chore,*. p42 . Aug 15
HYSTER CO., PORTLAND, ORE.
Lift truck. B p37 ... Oct 31

INDUSTRIAL PHYSICS AND ELECTRONICS CO., SALT LAKE CITY, UTAH
Belt slip detector. B p53 ... Aug 1
INFO INC., NEWTON, MASS.
Calculator,*. B p36 ... Dec 5
INGERSOLL-RAND CO., CORNING, N. Y.
Compressed air plant. B p60 ... Aug 29
INGERSOLL-RAND CO., NEW YORK, N. Y.
Quiet portable compressor. B p45 ... Dec 12
INGERSOLL-RAND, PHILLIPSBURG, N. J.
Rock breaker,*. B p194 ... Sep 19
Demolition breaker,*. B p42 ... Nov 14
Quiet breaker. B p42 ... Nov 21
INLAND MFG. CO., OMAHA, NEB.
Equipment cleaner,*. B p64 ... Aug 1
INLAND STEEL CO., CHICAGO, ILL.
Masonry beams. B p43 ... Nov 14

INSLEY MFG. CORP., INDIANAPOLIS, IND.
Hydraulic backhoe: pipeline tool,*. p40 ... Dec 12
INTERNATIONAL HARVESTER CO., CHICAGO, ILL.
Articulated loader turns sharply,*. p53 ... Aug 1
Extendible dipper stick. B p62 ... Aug 1
Front-end loader,*. B p60 ... Aug 29
Tractor loader,*. B p52 ... Oct 3
Scraper,*. B p54 ... Oct 17
INTERNATIONAL HARVESTER CO., SAN DIEGO, CALIF.
Turbine generator. B p43 ... Nov 14
INTERNATIONAL MATERIALS CORP., TUSTIN, CALIF.
Molding machine. B p56 ... Jul 11
INTERNATIONAL STAPLE & MACHINE CO., BUTLER, PA.
Nail driver,*. B p52 ... Oct 3
ITT MARLOW, MIDLAND PARK, N. J.
Submersible pump. B p56 ... Jul 11
Mini-diesels power pumps ease cold-weather starts. p48 ... Jul 18
IONICS, INC., WATERTOWN, MASS.
Oxygen demand analyzer. B p52 ... Oct 3

JACKSON VIBRATORS, INC., LUDINGTON, MICH.
Vibrator rollers. B p194 ... Sep 19
JAEGER MACHINE CO., COLUMBUS, OHIO
Concrete pump. B p49 ... Oct 3
JAMES ELECTRONICS INC., CHICAGO, ILL.
Insulation gage. B p60 ... Aug 29
JA-NA CO., BUFFALO, N. Y.
Keyways. B p86 ... Nov 7
JOSAM MANUFACTURING CO., MICHIGAN CITY, IND.
Trench drain. B p94 ... Nov 28
JOY MANUFACTURING CO., CLAREMONT, N. H.
Loader-hauler digs underground,*. p37 ... Jul 25

K-D MANUFACTURING CO., WACO, TEX.
Big fork lift. B p59 ... Aug 29
K-F MACHINE & MFG. CO., OKLAHOMA CITY, OKLA.
Check valve. B p52 ... Oct 3
KATRAK VEHICLE CO., CANBY, ORE.
Four tracks haul over 2 tons,*. p91 ... Nov 28
KAYKOR PRODUCTS CORP., YARDVILLE, N. J.
Safety skylight,*. B p187 ... Sep 19
Building panel. B p94 ... Nov 28
KENCO PUMP DIV., LORAIN, OHIO
Submersible pumps. B p52 ... Oct 3
Portable self-priming pump,*. B p56 ... Oct 17
Submersible pump. B p36 ... Dec 5
KENT AIR TOOL CO., KENT, OHIO
Light compressor,*. B p42 ... Nov 21
KIM HOTSTART MFG. CO., INC., SPOKANE, WASH.
Engine pre-heater. B p42 ... Nov 14
KOEHRING CO., DOVER, N. J.
Demolition hammers,*. B p53 ... Aug 1
KOEHRING CO., ENID, OKLA.
Combination drill. B p44 ... Nov 14
Water well drill. B p44 ... Nov 14
KOEHRING CO., MILWAUKEE, WIS.
Rear dumper. B p60 ... Jul 11
Small backhoe does big jobs,*. p37 ... Jul 25
Plant batches 450 cu. yd. per hour,*. p32 ... Aug 22
Truck crane. B p195 ... Sep 19
Stabilizer,*. B p61 ... Oct 17
Loader-backhoe. B p86 ... Nov 7
Truck crane. B p44 ... Nov 14
Long-boom crane. B p49 ... Nov 14
KORFUND DYNAMICS CORP., WESTBURY, N. Y.
Vibration isolator,*. B p54 ... Oct 10
KRUPP, FRIED. GMBH, ESSEN, WEST GERMANY
German hammer packs big wallop,*. p44 ... Oct 3

LEAR SIEGLER, INC., SALEM, ILL.
Pipe lifter,*. B p45 ... Dec 12
LEVOW, DAVID INC., SOUTH HACKENSACK, N.J.
Ladder. B p44 ... Oct 3
LIBBEY-OWENS-FORD CO., TOLEDO, OHIO
Architectural glass. B p94 ... Nov 28
LINDSAY P. K. CO. INC., Deerfield, N.H.
Portable air compressor. B p49 ... Oct 3
Portable air compressor. B p54 ... Oct 17
LITTLE GIANT PRODUCTS, INC., PEORIA, ILL.
Trencher,*. B p94 ... Nov 28
LOAD KING TRAILER CO., ELK POINT, S. D.
Semitrailer. B p92 ... Nov 28
LUXTRON, INC., HAVERHILL, MASS.
Emergency lighting. B p44 ... Oct 3

MACHINERY ELECTRIFICATION, INC., NORTHBORO, MASS.
Level control. B p43 ... Nov 14
MARINE TRAVELIFT, INC., STURGEON BAY, WIS.
Materials trailer. B p59 ... Aug 29
MARION METAL PRODUCTS CO., MARION, OHIO
Hydraulic hoist. B p43 ... Nov 14
MARTIN ENGINEERING CO., NEPONSET, ILL.
Concret vibrator,*. B p36 ... Dec 5
MCDOWELL-WELLMAN ENGINEERING CO., CLEVELAND, OHIO
Hydraulic pavement breaker. B p44 ... Oct 3
MCKEE, ARTHUR G. & CO., CLEVELAND, OHIO
Grit separator,*. B p94 ... Nov 28
MECHANICAL ENTERPRISES, INC., ALEXANDRIA, VA.
Typewriter letters on drawings,*. p53 ... Oct 10
MERCER RUBBER CO., TRENTON, N. J.
Long length hose. B p60 ... Jul 11
MID CONTINENT MFG. CO., BAYONNE, N.J.
Anchor bolts. B p94 ... Nov 28
MIDLAND PRODUCTS CO., MIDLAND PARK, N.J.
Nonclog pump. B p59 ... Aug 29
MIDWESTERN MANUFACTURING CO., TULSA, OKLA
Sideboom,*. B p61 ... Oct 17

MILLER EQUIPMENT CO., SALISBURY, N. C.
Lifting claw,*. B p59 ... Aug 29
MILLER SWIVEL PRODUCTS, INC., POMONA, CALIF.
Insulated lift blocks. B p49 ... Oct 3
Weight ball. B p44 ... Nov 14
Swiveler,*. B p92 ... Nov 28
MILWAUKEE ELECTRIC TOOL CORP., BROOKFIELD, WIS.
Angle-cut saw. B p54 ... Aug 29
Hammer-drill. B p59 ... Aug 29
Heavy-duty drill. B p42 ... Nov 21
MODERNFOLD, NEW CASTLE PRODUCTS, INC., NEW CASTLE, IND.
Room divider support. B p56 ... Oct 17
MOLLY CO., THE BOSTON, MASS.
Concrete anchor. B p196 ... Sep 19
MONROE CO., INC., THE CLEVELAND, OHIO
Glass-fiber roofing. B p59 ... Aug 29
Concrete patching. B p188 ... Sep 19
MORENGINEERING, INC., HOUSTON, TEX.
New electronics computer estimates construction cost,*. p183 ... Sep 19
MORGEN MANUFACTURING CO., YANKTON, S. D.
Pilaster brackets,*. B p59 ... Aug 29
MOTOROLA COMMUNICATIONS & ELECTRONICS, INC., CHICAGO, ILL.
Two-way radio. B p41 ... Nov 21

NATIONAL DESIGN CENTER, NEW YORK, N. Y.
New information system retrieves specifications. p183 Sep 19
NATIONAL SAFETY SUPPLY INC., BUFFALO, N. Y.
Oxygen tank,*. B p58 ... Aug 1
NEWAGE INDUSTRIES, INC., JENKINTOWN, PA.
Space saver hose. B p53 ... Oct 10
NORTECH CORP., MIDLAND PARK, N.J.
Air tool cleaner. B p32 ... Aug 22
NUMONICS CORP., PHILADELPHIA, PA.
Materials take-off,*. B p92 ... Nov 28
NYCAL CORP., CARLSTADT, N. J.
Engine protection system. B p37 ... Oct 31

OIL CENTER RESEARCH, INC., LAFAYETTE, LA.
Hydraulic seal. B p188 ... Sep 19
OMARK INDUSTRIES, PORTLAND, ORE.
Fastener,*. B p58 ... Jul 11
OURY ENGINEERING CO., ELMHURST, ILL.
Concrete conveyor. B p45 ... Dec 12
OWENS-CORNING FIBERGLAS CORP., NEW YORK, N. Y.
Noncumbustible insulation. B p92 ... Nov 28

PACECO, ALAMEDA, CALIF.
Floating dredges work tight,*. p41 ... Sep 26
PENNSALT CHEMICALS CORP., PHILADELPHIA, PA.
Lining compound. B p52 ... Oct 3
PENNSYLVANIA SLING CO., PITTSBURGH, PA.
Pipe slings. B p49 ... Oct 3
PETRIK, A. V. CO., ROSLYN, PA.
Plumb device. B p37 ... Aug 22
PETTIBONE MULLIKEN CORP., ROSEMONT, ILL.
Tower crane. B p41 ... Sep 26
PHILLIPS DRILL CO., MICHIGAN CITY, IND.
Anchor drill,*. B p92 ... Nov 28
PHOENIX PRODUCTS CO., MILWAUKEE, WIS.
Floodlight. B p36 ... Aug 8
PIERCE-PACIFIC MFG. CO., PORTLAND, ORE.
Crane carrier accepts any make of upper works. B p53 Jul 18
Load equalizers. p187 ... Sep 19
PITMAN MFG., CO., GRANDVIEW, MO.
Winch kits. B p62 ... Aug 1
PLAN HOLD CORP., TORRANCE, CALIF.
Rolled drawing files. B p60 ... Jul 11
PLASTILINE, INC., POMPANO BEACH, FLA.
Shell coupling,*. B p56 ... Oct 17
POLYGON PLASTIC CO., WALKERTON, IND.
Fiberglass well screen,*. B p86 ... Nov 7
PORTEC, INC., MINNEAPOLIS, MINN,
Hot mix surge system. B p41 ... Nov 21
POWER CURBERS, INC., SALISBURY, N. C.
Unit places medians automatically,*. p37 ... Oct 31
PRECO CHEMICAL CORP., PLAINVIEW, N. Y.
Concrete patching. B p44 ... Oct 3
PRICE & RUTZEBECK, HAYWARD, CALIF.
Counterbore bit. B p60 ... Aug 29
PROTECH ADVISORY SERVICES LTD., HERTFORDSHIRE, ENGLAND
Water quality monitor. B p52 ... Oct 3
PROTECTOR PRODUCTS, INC., CLEVELAND, OHIO
Damage preventer,*. B p43 ... Nov 14

RACINE HYDRAULICS, INC., RACINE, WIS.
Concrete trowels. B p56 ... Jul 11
Miniscreed. B p58 ... Aug 1
Furnace on wheels,*. B p43 ... Nov 14
RAMEY HYDRAULIC LOADERS, ROSEBURG, ORE.
Truck-mounted loader. B p194 ... Sep 19
RATCLIFF HOIST CO., BELMONT, CALIF.
Load binder. B p86 ... Nov 7
RAY CO, INC., MINNEAPOLIS, MINN.
Miniroller,*. B p56 ... Aug 1
READING BODY WORKS, INC., READING, PA.
Side unit. B p44 ... Nov 14
RELIANCE ELECTRIC CO., CLEVELAND, OHIO
Vibration monitors. B p45 ... Dec 12
REMINGTON ARMS CO., INC., PARK FOREST, ILL.
Circular saw. B p43 ... Aug 15
Vibrator head. B p196 ... Sep 19
Masonry hammer-drill. B p92 ... Nov 28
REVERE CHEMICAL CORP., CLEVELAND, OHIO
Roof repair kit. B p59 ... Aug 29
REYNOLDS METALS CO., PARK RIDGE, ILL.
Ribbed aluminum. B p60 ... Jul 11
RIVINIUS, INC., EUREKA, ILL.
Pusher block. B p32 ... Aug 22
Control kit. B p86 ... Nov 7
ROBERTSON, H. H. CO., PITTSBURGH, PA.
Long-span deck,*. B p43 ... Nov 21

ROCKAWAY METAL PRODUCTS CORP., INWOOD, N. Y.
Partitions. B p94 ... Nov 28
ROCKLAND INC., WINTER GARDEN, FLA.
Cement spreader is fast, accurate,*. p54 ... Jul 11
ROCKMASTER TOOLS INC., OKLAHOMA CITY, OKLA.
Powered tooth bucket. B p60 ... Jul 11
RODGERS HYDRAULIC, INC., MINNEAPOLIS, MINN.
Track press. B p56 ... Aug 1
RO PRODUCTS, OLATHE, KAN.
Hydraulic cranes. B p53 ... Aug 1
ROTOLITE SALES CORP., STIRLING, N. J.
Plans copier. B p53 ... Oct 10
ROUND, DAVID & SON, INC., SOLON, OHIO
Cable hoists. B p37 ... Aug 22
RUGER EQUIPMENT, INC., UHRICHSVILLE, OHIO
Hydraulic cranes. B p49 ... Nov 14
RUPP THE WARREN CO., MANSFIELD, OHIO
Solids pump. B p49 ... Oct 3

SAFETY GUIDE PRODUCTS, SCOTTSBURG, IND.
Breakaway cones. B p86 ... Nov 7
SAN DIEGO AIRCRAFT ENGINEERING, INC., SAN DIEGO, CALIF.
Planning board. B p58 ... Jul 11
SCHEU PRODUCTS, UPLAND, CALIF.
Radiant heater. B p54 ... Oct 10
SEA-AIR CHEMICAL CORP., LONG ISLAND CITY, N. Y.
Rust barrier. B p44 ... Oct 3
SETHCO MFG. CORP., FREEPORT, N. Y.
Sump pump. B p60 ... Aug 29
Filter chambers. B p61 ... Oct 17
SHARON STEEL CORP., SHARON, PA.
Stainless steel flashing. B p37 ... Aug 22
SHELCO SPECIALTIES, MINNEAPOLIS, MINN.
Surveying rod holder. B p45 ... Dec 12
SHIPMAN, V. B. & CO., LTD., TORONTO, ONT., CANADA
Astro boot,*. B p190 ... Sep 19
SIGMAMOTOR, INC., MIDDLEPORT, N. Y.
Pollution sampler,*. B p186 ... Sep 19
SKF INDUSTRIES, INC., PHILADELPHIA, PA.
Solids pump. B p190 ... Sep 19
SKIL CORP., CHICAGO, ILL.
Saw blades. B p32 ... Aug 22
Chain saws. B p94 ... Nov 28
SKY CLIMBER, INC., GARDENA, CALIF.
Safety hitch. B p41 ... Sep 26
SNYDER MANUFACTURING CO., NEW PHILADELPHIA, OHIO
Foul-weather jacket. B p54 ... Oct 17
SONFORD PRODUCTS CORP., MINNEAPOLIS, MINN.
Liquid sampler. B p49 ... Nov 14
SPAULDING, J. H. CO., CINCINNATI, OHIO
Luminaires. B p92 ... Nov 28
STAGOR CORP., NEWARK, N. J.
Drafting unit. B p58 ... Jul 11
Drafting desks. B p53 ... Oct 10
Mobile blueprint rack. B p54 ... Oct 10
Drafting desk. B p92 ... Nov 28
Blueprint file. B p45 ... Dec 12
THE STANDARD PRODUCTS CO., PORT CLINTON, OHIO
Rigid reglet. B p40 ... Jul 25

STEELCOTE MANUFACTURING CO., ST. LOUIS, MO.
Paint. B p58 ... Jul 11
STEELITE BUILDINGS, INC., PITTSBURGH, PA.
Roofing and siding. B p58 ... Jul 11
STOW MANUFACTURING CO., BINGHAMTON, N. Y.
Ceiling grinder. B p80 ... Jul 11
Troweling machine. B p59 ... Aug 29
Lightweight vibrator. B p186 ... Sep 19
Concrete saw,*. B p49 ... Nov 14
STUDEBAKER CORP., MINNEAPOLIS, MINN.
Emergency generator. B p43 ... Nov 14
Power provider,*. B p44 ... Nov 14

TALBERT TRAILERS, RENSSELAER, IND.
Triple-axle trailers. B p43 ... Nov 21
TALK-A-PHONE CO., CHICAGO, ILL.
Intercom systems. B p54 ... Oct 10
TECHSONICS, EL PRADO, N. M.
Power converter. B p88 ... Nov 7
TEMPLETON, KENLY & CO., BROADVIEW, ILL.
Pipe benders. B p49 ... Oct 3
THIOKOL CHEMICAL CORP., TRENTON, N.J.
Canal sealant. B 58 ... Aug 1
THOMPSON POLYETHYLENE BUILDINGS, INC., SANTA ANA, CALIF.
Portable toilet. B p94 ... Nov 28
TIMBER ENGINEERING CO., WASHINGTON, D. C.
Framing anchors. B p37 ... Aug 22
TINKER & RASOR, SAN GABRIEL, CALIF.
Holiday detector,*. B p188 ... Sep 19
Leak detector,*. B p49 ... Nov 14
TRANSPACIFIC EQUIPMENT CORP., LOS ANGELES, CALIF.
Traffic markers. B p58 ... Jul 11
TREPEL SYSTEMS INC., PORTLAND, ME.
Work platform. B p49 ... Oct 3
TRIAD FASTENER CORP., MINNEAPOLIS, MINN.
Wall fabricator. B p56 ... Oct 17

UNION CARBIDE CORP., NEW YORK, N. Y.
Power supply. B p42 ... Nov 14
UNIT RIG & EQUIPMENT CO., TULSA, OKLA.
Mammoth truck hauls 200 tons,*. p33 ... Oct 17
U. S. EXPANSION BOLT CO., YORK, PA.
Fastening tool,*. B p52 ... Oct 3
U. S. PLYWOOD, NEW YORK, N. Y.
Sculptured panels. B p43 ... Nov 14
U. S. RUBBER RECLAIMING CO., INC., BUFFALO, N. Y.
Asphalt sealant additive. B p58 ... Jul 11
U. S. SAFETY SERVICE, KANSAS CITY, MO.
Hard hat. B p37 ... Aug 2
U. S. STEEL CORP., PITTSBURGH, PA.
Curtainwall system. B p44 ... Oct 3
U. S. TRACTOR AND IMPLEMENT OPERATIONS, BIRMINGHAM, MICH.
Concrete demolisher,*. B p60 ... Jul 11
UNITED TECHNOLOGY CENTER, SUNNYVALE, CALIF.
Teohite pipe gets its own plant,*. p53 ... Aug 29
UNIVERSAL ENGINEERING CORP., CEDAR RAPIDS, IOWA
Portable plant turns out four grades of material. p53 . Jul 18

Screening unit. B p58 ... Aug 1
Jaw crushers. B p84 ... Aug 1
UNIVERSAL METAL HOSE CO., CHICAGO, ILL.
Pump connector. B p38 ... Aug 8
UTILITY BODY CO., BERKELEY, CALIF.
Derrick extension. B p58 ... Jul 11

VIBER CO., POMONA, CALIF.
Vibrators. B p92 ... Nov 28

WACKER CORP., MILWAUKEE, WIS.
Concrete vibrators. B p80 ... Jul 11
Breakers,*. B p86 ... Nov 7
WAGNER INDUSTRIES, A. F. INC., CONCORD, CALIF.
Crawlers replace vehicles' tires,*. p40 ... Dec 12
WALLACE-MURRAY CORP., PHILADELPHIA, PA.
Masonry blades. B p53 ... Oct 10
WALLACE & TIERNAN INC., BELLEVILLE, N. J.
Chlorinator. B p49 ... Oct 3
WANG LABORATORIES, INC., TEWKSBURY, MASS.
Mini programmer holds 640 steps,*. p54 ... Oct 17
WARN MANUFACTURING CO., SEATTLE, WASH.
Power winch,*. B p53 ... Oct 10
WARNER & SWASEY, LANSING, MICH.
Fork lift. B p61 ... Oct 17
WATSON MFG. CO., FORT WORTH, TEX.
Caisson unit. B p49 ... Oct 3
WESTERN MANUFACTURING CO., PORTLAND, ORE.
Demolition aid chews large scrap to splinters,*. p184 Sep 19
WESTINGHOUSE AIR CONDITIONING DIV., STAUNTON, VA.
Airconditioning unit. B p60 ... Aug 29
WESTINGHOUSE ELECTRIC CORP., PITTSBURGH, PA.
Welding control. B p43 ... Nov 21
WESTMOUNT ENGINEERING CO., SANTA FE SPRINGS, CALIF.
Portable hoist. B p45 ... Dec 12
WEYERHAEUSER, TACOMA, WASHINGTON
Resin-coated panels cut on-site formwork labor. p40 . Nov 14
WIGGINS, E. B. INC., LOS ANGELES, CALIF.
Fueling system,*. B p62 ... Aug 1
Refueling system. B p53 ... Oct 10
WILD HEERBRUGG INSTRUMENTS, INC., FARMINGDALE, N. Y.
Automatic level. B p53 ... Oct 10
WILSON, THOMAS C. INC., LONG ISLAND CITY, N. Y.
Paint-rust scaler. B p44 ... Oct 3
WISCONSIN MOTOR CORP., MILWAUKEE, WIS.
12-hp engine. B p41 ... Nov 21
Heavy-duty engine. B p42 ... Nov 21
WISCONSIN TRAILER CO., INC., RICHFIELD, WIS.
Trailer shocks. B p60 ... Jul 11
WORTHINGTON CORP., HARRISON, N. J.
Portable compressor. B p94 ... Nov 28
WYCO TOOL CO., DES PLAINES, ILL.
Lightweight hoist. B p59 ... Aug 29

X-PANDO CORP., LONG ISLAND CITY, N. Y.
Mortar. B p37 ... Aug 22
Joint compound. B p49 ... Nov 14

Engineering News-Record

Published By ENGINEERING NEWS-RECORD
Copyright McGraw-Hill, Inc., 1969